

READ BY  
FARMERS  
IN EVERY STATE AND TERRITORY.

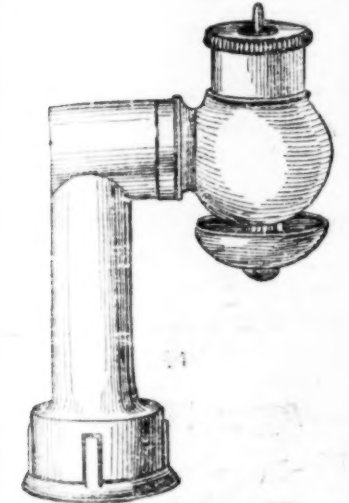
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# THE AMERICAN FARMER

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THE VERMOREL NOZZLE.



THE AQUARIUS.



DUTTON'S BIG.



FENDLUM SPRAYING PUMP.



PORTABLE INSECTICIDE.

## SPRAY CALENDAR.

By E. G. LOEBMAN.

HORTICULTURAL DIVISION OF  
CORNELL AGRICULTURAL  
EXPERIMENT STATION

In the preparation of this calendar the most important points regarding sprays have been selected and arranged in such a manner that the grower can see at a glance what to apply and when to make the applications. The more important insect and fungous enemies are also mentioned, so that a fairly clear understanding of the work can be obtained by examining the table below. When making the applications advised, other enemies than those mentioned are also kept under control, for only the most serious ones could be named in so brief an outline. The directions have been carefully compiled from the latest results obtained by leading horticulturists and entomologists, and they may be followed with safety.

NOTE.—In this calendar it will be seen that some applications are in parentheses, and these are the ones which are *least important*. The number of applications given in each case has particular reference to localities in which fungous and insect enemies are most abundant. If the crops are not troubled when some applications are advised, it is unnecessary to make any. It should be remembered that in all cases success is dependent upon the exercise of proper judgment in making applications. Know the enemy to be destroyed; know the remedies that are most effective; and, finally, apply them at the proper season. Be prompt, thorough, and persistent. Knowledge and good judgment are more necessary to success than any definite rules.

### Apple.

**Scab.** (1. Copper sulphate solution before buds break; 2. Bordeaux mixture when leaf buds are open, but before flower buds expand; 3. Repeat 2 as soon as blossoms have fallen; 4. Bordeaux mixture 10 to 14 days after the third; 5. 6. Repeat 4 at intervals of about two weeks.) **Grey-rot.** (1. When first symptoms appear apply Paris green very thoroughly; 2. Repeat 1 after 8 to 10 days; 3. 4. Repeat every 10 days if necessary.) **Bud-moth.** (1. As soon as leaf tips appear in buds, Paris green; 2. Repeat 1 before the blossom buds open; 3. Repeat 2 when blossoms have fallen.) **Collared moth.** 1. Paris green immediately after blossoms have fallen; 2. Repeat 1, 7 to 10 days later; 3. 4. Paris green at intervals of 1 to 3 weeks after 2, especially if later broods are troublesome.) Paris green may be added to the Bordeaux mixture and the two applied together with excellent effect. **Chor-former.** As for Bud-moth.

### Bean, Beet, Cabbage and Cauliflower.

**Anthracnose, Pod-rot.** 1. Bordeaux mixture, when first true leaf has expanded; 2, 3, etc. The same, at short intervals to keep the foliage covered by the mixture. **Leaf-spot.** 1. When 4 or 5 leaves have expanded; 2, 3, etc. The same every 10 to 14 days. **Aphis.** 1. Upon young plants, kerosene emulsion or arsenites when worms are first seen; 2. If plants are not heading repeat 1 when necessary; 3. When beginning to head, 2, 3, when necessary. 1. Paris green immediately after blossoms have fallen; 2. Repeat 1, 7 to 10 days later; 3. 4. Paris green at intervals of 1 to 3 weeks after 2, especially if later broods are troublesome.) Paris green may be added to the Bordeaux mixture and the two applied together with excellent effect. **Chor-former.** As for Bud-moth.

### Carnation.

**Anthracnose, Rust-spot.** 1. At first appearance of disease, Bordeaux mixture thoroughly applied in fine spray; 2, 3, etc. If plants are not heading repeat 1 when necessary; 3. When beginning to head, 2, 3, when necessary. 1. Paris green immediately after blossoms have fallen; 2. Repeat 1, 7 to 10 days later; 3. 4. Paris green at intervals of 1 to 3 weeks after 2, especially if later broods are troublesome.) Paris green may be added to the Bordeaux mixture and the two applied together with excellent effect. **Chor-former.** As for Bud-moth.

### Celery, Cherry.

**Leaf-blight.** 1. Ammoniacal copper carbonate at first appearance of disease; repeat 1 to keep foliage protected. **Black-rot.** See Plum. **Rot.** 1. When buds break, Bordeaux mixture; 2. When fruit has set, repeat 1; 3. When fruit is growing, ammoniacal copper carbonate. **Aphis.** 1. Kerosene emulsion when insects appear; 2. 3. Repeat at intervals of 3 to 4 days if necessary. **Slugs.** 1. When insects appear, arsenites, hellebore or air-slaked lime; 2, 3. Repeat 1 in 10 to 14 days if necessary.

### Chrysanthemum.

**Leaf-spot.** 1. Bordeaux mixture, or ammoniacal copper carbonate at intervals of 10 to 14 days, to keep foliage protected.

### Cranberry.

**Fire-worm, Fruit-worm.** 1. When larvae first appear, arsenites, kerosene emulsion, or tobacco water; 2. After 10 to 14 days repeat 1; 3. Repeat if necessary.

### Currant.

**Leaf-blight.** 1. When injury first appears, before the fruit is harvested, ammoniacal copper carbonate, to avoid staining the fruit; 2. After fruit is harvested, Bordeaux mixture freely applied; 3. Repeat 2 when necessary. **Worm.** 1. When first leaves are nearly expanded, arsenites; 2. After 10 to 14 days hellebore; 3. Repeat 2 if necessary.

### Eggplant.

**Leaf-spot.** 1. As soon as plants are established in the field, Bordeaux mixture; 2, 3. Repeat 1 at intervals of 2 to 3 weeks, till first fruits are  $\frac{1}{2}$  grown; 4. Ammoniacal copper carbonate; repeat when necessary.

### Gooseberry.

**Mildew.** 1. Before buds break, Bordeaux mixture; 2. When first leaves have expanded, Bordeaux mixture or potassium sulphide; 3, 4, etc. Repeat 2 at intervals of 7 to 10 days, if necessary, throughout the Summer. Avoid staining the fruit. **Current-worm.** See under Currant.

### Grape.

**Anthracnose.** 1. Before buds break in Spring, sulphate of iron and sulphuric acid solution; 2. Repeat 1 after 3 or 4 days to cover untreated portions. **Black-rot.** (1. As soon as first leaves are fully expanded, Bordeaux mixture; 2. After fruit has set, Bordeaux mixture; 3. Repeat 2 at intervals of 2 to 3 weeks until fruit is  $\frac{1}{2}$  grown; 4. Ammoniacal copper carbonate when fruit is nearly grown; 5, 6, etc. Repeat 4 at intervals of 7 to 14 days as required. **Dormy-mildew.** **Powdery-mildew.** The first application recommended under Black-rot is of especial importance. **Leaf-blight.** Apply very thoroughly the later applications recommended under Black-rot. **Sticky-bug.** 1. As buds are swelling, arsenites; 2. After 10 to 14 days, repeat 1.

### Hollyhock.

**Rot.** 1. In Spring, when foliage expands, Bordeaux mixture; 2, 3, etc. Apply a good fungicide at short intervals to keep new growths covered.

### Nursery Stock.

**Fungous diseases.** 1. When first leaves appear, Bordeaux mixture; 2, 3, etc. Repeat 1 at intervals of 10 to 14 days to keep foliage well covered.

### Peach, Nectarine, Apricot.

**Fire-worm.** 1. Before buds swell, copper sulphate solution; (2. Before flowers open, Bordeaux mixture; 3. When fruit has set, repeat 1; 4. Repeat after 10 to 14 days; 5. When fruit is nearly grown, ammoniacal copper carbonate; 6, 7, etc. Repeat 5 at intervals of 5 to 7 days if necessary.

### Pear.

**Leaf-blight or Fruit-spot.** (1. As buds are swelling copper sulphate solution; 2. Just before blossoms open, Bordeaux mixture; 3. After fruit has set, repeat 2; 4, 5, etc. Repeat 2 at intervals of 2 to 3 weeks as appears necessary. **Leaf-blight.** 1. Before buds swell in Spring, kerosene emulsion, diluted 5 to 7 times. **Paylla.** 1. When first leaves are unfolded in Spring, kerosene emulsion diluted 15 times; 2, 3, etc. At intervals of 2 to 6 days repeat 1 until the insects are destroyed. **Slugs.** See under Cherry.

### Plum.

**Brown-rot.** See under Peach. **Leaf-blight.** (1. When first leaves have unfolded, Bordeaux mixture; 2. When fruit has set, Bordeaux mixture; 3, 4, etc. Repeat 2 at intervals of 2 to 3 weeks; use a clear fungicide after fruit is  $\frac{1}{2}$  grown. **Black-rot.** 1. During first warm days of early Spring, Bordeaux mixture; 2. Repeat 1 when buds are swelling; 3. During latter part of May, repeat 1; 4. Repeat 1 during middle of June (5. Repeat 1 in July.) **Cercospora.** Spraying is not always satisfactory; jar the trees after fruit

has set, at intervals of 1 to 3 days during 2 to 5 weeks. **Plum Scale.** 1. In Autumn, when leaves have fallen, kerosene emulsion, diluted 4 times; 2 and 3. In Spring, before buds open, repeat 1. **San Jose Scale.** Thorough applications of kerosene emulsion as recommended under Plum Scale may prove effective if followed later in the season by others, diluting the emulsion to avoid injuring foliage.

### Potato.

**Early-blight.** 1. When vines are  $\frac{1}{2}$  grown, Bordeaux mixture; 2 and 3. Repeat 1 at intervals of 2 to 3 weeks. (Only partially successful.) **Rot.** 1. During middle of July, Bordeaux mixture; 2 and 3. At intervals of 1 to 3 weeks, repeat 1. **Scab.** Soak uncut seed potatoes 1 hour in solution of 1 ounce corrosive sublimate in 8 gallons water. **Potato beetle.** 1. When beetles first appear, arsenites; 2 and 3. Repeat 1 when necessary.

### Quince.

**Leaf-blight, or Fruit-spot.** (When blossom buds appear, Bordeaux mixture; 2. When fruit has set, repeat 1; 3, 4, etc. Repeat 1 at intervals of 2 weeks, until fruit is  $\frac{1}{2}$  grown; if later treatments are necessary, ammoniacal copper carbonate.

### Raspberry, Blackberry, Dewberry.

**Anthracnose.** 1. Before buds break, copper sulphate solution; also cut out badly infested canes; 2. When growth has commenced, Bordeaux mixture; 3, 4, etc. Repeat 2 at intervals of 1 to 3 weeks, avoid staining fruit by use of clear fungicide. (Partially successful.) **Orange-rot.** Remove and destroy affected plants as soon as discovered. **San-fly.** 1. When first leaves have expanded, arsenites; 2. After 2 to 3 weeks repeat 1, or apply kerosene emulsion. (Unsatisfactory.)

### Rose.

**Black-spot.** Spray plants once a week with ammoniacal copper carbonate. **Mildew.** Keep heating pipes painted with equal parts lime and sulphur mixed with water to form a thin paste. Spray with copper fungicide. **Aphis.** **Leaf-hopper.** Kerosene emulsion or tobacco water applied to the insects' bodies at short intervals is effective. **Red-spider.** Spray for aphis, or with forcible streams of clear water.

### Strawberry.

**Leaf-blight.** 1. When growth begins in Spring, Bordeaux mixture; 2. When first fruits are setting, repeat 1; 3. During fruiting season, ammoniacal copper carbonate; 4. After setting, or on non-bearing plants, Bordeaux mixture at intervals of 1 to 3 weeks. **San-fly.** Spray plants when not in bearing with arsenites, repeating application if necessary.

### Tomato.

**Leaf-blight.** 1. As soon as disease is discovered, Bordeaux mixture or a clear fungicide; 2, 3, etc. Repeat 1 at intervals of 7 to 10 days. **Rot.** Spray as directed under Leaf-blight. (Unsatisfactory in many cases.)

### Violet.

**Blight Spot.** 1. When disease is first seen in Summer of Fall, Bordeaux mixture; 2, 3, etc. Repeat 1 at intervals of 1 to 2 weeks, using ammoniacal copper carbonate to avoid staining blossoms. (Not always satisfactory, as good culture must also be given.) Remove affected leaves.

### FORMULAS.

#### Paris Green.

Paris green . . . . . 1 pound  
Water . . . . . 150-300 gallons  
If this mixture is to be used upon fruit trees, 1 pound of quick-lime should be added, repeated applications will injure most foliage, unless the lime is used. Paris green and Bordeaux mixture can be applied together with perfect safety. Use at the rate of 4 ounces of the arsenites to 50 gallons of the mixture. The action of neither is weakened, and the Paris green uses all its caustic properties. For insects which chew.

#### London Purple.

This is used in the same proportion as Paris green, but as it is more caustic it should be applied with two or three times its weight of lime, or with the Bordeaux mixture. The

composition of London purple is variable, and unless good reasons exist for supposing that it contains as much arsenic as Paris green, use the latter poison. Do not use London purple on peach or plum trees unless considerable lime is added. For insects which chew.

#### Normal or 1.6 Per Cent. Bordeaux Mixture.

Copper Sulphate . . . . . 6 pounds  
Quicklime . . . . . 4  
Water . . . . . 40-50 gallons

Dissolve the copper sulphate by putting it in a bag of coarse cloth and hanging this in a vessel holding at least 4 gallons, so that it is just covered by the water. Use an earthen or wooden vessel. Slake the lime in an equal amount of water. Then mix the two and add enough water to make 40 gallons. It is then ready for immediate use. If the mixture is to be used on peach foliage it is advisable to add two pounds of lime in the above formula. When applied to such plants as carnations or cabbages it will adhere better if a pound of hard soap be dissolved in hot water and added to the mixture. For rats, molds, mildews, and all fungous diseases.

#### Iron Sulphate and Sulphuric Acid Solution.

Water (hot) . . . . . 100 parts  
Iron sulphate, as much as the water will dissolve.

Sulphuric acid (commercial) . . . 1 part  
The solution should be prepared just before using. Add the acid to the crystals, and then pour on the water. Valuable for grape anthracnose, the dormant vines being treated by means of sponges or brushes.

#### Potassium Sulphate Solution.

Potassium sulphate . . . . .  $\frac{1}{2}$  to 1 oz.  
Water . . . . . 1 gallon  
This preparation loses its strength upon standing, so should be made immediately before using. Particularly valuable for surface mildews.

#### Ammoniacal Copper Carbonate.

Copper carbonate . . . . . 1 oz.  
Ammonia, enough to dissolve the copper. Water . . . . . 9 gallons  
Before making the solution, the ammonia should be prepared as follows: Use 26 $\frac{1}{2}$  ammonia, and dilute with 7 to 8 volumes of water. Then gradually add the necessary amount to the copper carbonate until all is dissolved. It is best treated in large bottles, and in them it will keep indefinitely. Dilute as required. For same purposes as the Bordeaux mixture.

#### Copper Sulphate Solution.

Copper sulphate . . . . . 1 pound  
Water . . . . . 15 gallons  
Dissolve the copper sulphate in the water, when it is ready for use. This should never be applied to foliage, but must be used before the buds break. For peaches and nectarines use 25 gallons of water. For fungous diseases.

#### Hellebore.

Fresh white hellebore . . . . . 1 ounce  
Water . . . . . 3 gallons  
Apply when thoroughly mixed. This poison is not so energetic as the arsenites, and may be used a short time before the sprayed portions mature. For insects that chew.

#### Kerosene Emulsion.

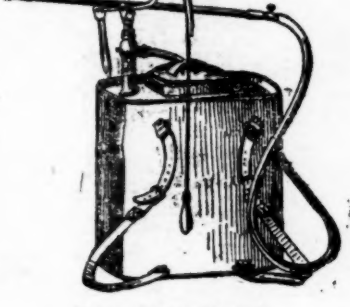
Hard soap . . . . .  $\frac{1}{2}$  pound  
Boiling water . . . . . 1 gallon  
Kerosene . . . . . 2 gallons  
Dissolve the soap in the water, add the kerosene, and churn with a pump for 5 to 10 minutes. Dilute 4 to 25 times before applying. Use strong emulsion for all scale insects. For such insects as plant-lice, mealy-bugs, red-spider, thrips, weaker preparations will prove effective. Cabbage-worms, currant-worms and all insects which have soft bodies can also be successfully treated. It is advisable to make the emulsion shortly before it is used.

#### Tobacco Water.

This solution may be prepared by placing tobacco stems in a water-tight vessel, and then covering them with hot water. Allow to stand several hours, dilute the liquor from 3 to 5 times, and apply. For soft-bodied insects.



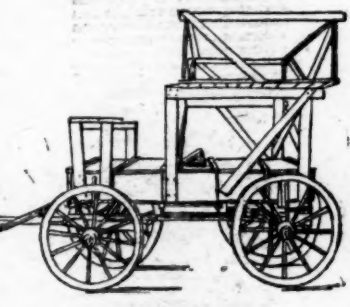
BARREL PUMP.



KNAPSACK SPRAYER.



THE DOUGLASS AQUARIUS.



YEOMAN'S RIG.



RIG FOR SPRAYING BUSHES.



WARE'S RIG.

SPRAYING.  
It has Ceased being an Experiment,  
and is Now a Necessity.

[Read at Mt. Pleasant, Pa., by Wm. Hall, Content, Pa.]

Did you ever stop to think that this matter of spraying is no longer a question of policy, but of necessity to our farmers and fruit-growers?

War against this army of pests should be no longer defensive, but aggressive, if we would save our fruits, as well as our trees and vines which bear them. We often suppose that our fruits are killed by early frost, when some insect has killed them before the frost came.

Many of the insects that destroy our fruits feed on the leaves of the tree or vine. A man whose lungs have been eaten away by disease is no longer of much benefit to this world. The same we may apply to a fruit tree. Its leaves are its lungs, and when the leaves are destroyed we cannot expect much fruit. We may take, for example, a potato stalk. We have all had more or less experience with the pest of the potato (the potato bug). If we expect a crop of potatoes we will try to keep them free from the bug, and the best way that we can do this is to spray the vines with some poisonous substance, such as a small portion of Paris green, mixed with water, of which one bushel of potatoes would pay for enough to spray an acre, and the man that fails to spray his potatoes will come out at the little end of the horn.

We now discuss the plum, of which on an average we do not have a crop more than once out of every five years. How often you have seen trees decorated with cornucopias and bottles of sugar-water, off which we are just feeding the curculio to keep it away from the plum, and, in spite of all we can do, it will destroy most of them. You can find a great deal easier remedy by simply spraying the tree four or five times in one season and killing the curculio.

Of all the fruits, the apple is the most important. We can get away with the insects in potato culture partly by regular strength, but when we come to apples we must use our intellect. We must study their habits and destroy them by the wholesale. We have a great many different insects that destroy apples, such as the mealy and the cunker worm and caterpillar. These may all be killed by simply spraying the trees with some poisonous substance, which can be purchased at any drug store.

There are many other diseases found among apples, such as black rot, apple scab, twig blight, etc. Insects are very often blamed for injuries which are really caused by parasitic fungi. The effect of judicious spraying with the fungicides is to check the dropping of immature fruit in the Spring; to cause it to grow to larger size and more free from blemishes; to cause it to hang better to the tree while ripening.

Spraying has been tested many times by simply spraying part of a tree. W. H. More, of Middletown, Del., sprayed only one limb on a Rambo tree. The first application was made the 11th of May, and three others at intervals of 10 to 12 days afterward. And in October he gathered the apples, and the result was 363 perfect apples and 86 imperfect, or two bushels of perfect and one-eighth of a bushel of imperfect.

The tree was well set when he began spraying, but when picking there was not an apple on the tree except on that limb. Some may doubt this, but I can give you a dozen men's names who testify to the truth of it.

As for my own personal experience, I can say I have derived a great deal of benefit from spraying. A year ago last Summer I had between 500 and 600 bushels of apples, and there were but very few in other orchards. And last Summer I had about 100 bushels, but last year the frost killed most of them, and those that were not killed were damaged. In the State of Michigan they have a compulsory spraying-law. So, if it is a benefit to Michigan, it would surely benefit us.

It is used more at present in the grape regions. In Europe these remedies have been used for five years or longer, and their application there is almost universal.

You have all noticed many of the diseases among grapes, such as the black rot, the birds-eye rot, the brown rot, and mildew. We find the black rot most prevalent in our County. Many a year our grapes have been completely destroyed. It is very easy to effect a cure on grapes. Lime and blue vitriol, which are very cheap, will kill all the insects that hinder their progress by eating the leaves, and also stop the black rot and mildew.

There is not a farmer but can afford to get a spraying machine. They can be purchased for \$3 and upward.



BRASS PUMP ATTACHED TO BARREL.



KNAPSACK SPRAYING MACHINE.



THE DOUGLASS AQUARIUS.



# Stock.

25 CENTS



## POULTRY PIGEONS &amp; PET-STOCK



RAISING TURKEYS.

## Practical Advice on the Care and Raising of Poultry.

A correspondent in *The Fancier's Gazette* gives the following practical advice on raising turkeys:

"If it is desirable to set the turkey hens in their own nests, then they can be allowed to 'steal' them; only these nests should be shaped up, and after the turkey commences to sit, erect a temporary cover over her to keep off the rain. The first consideration then is the hen. Be sure to dust the hen thoroughly with a good insect powder when commencing to sit. Hold her up by the legs and work the powder down into the feathers by hand. After 10 days dust her again, so as to kill all the new hatches. A day before she is due to hatch repeat the operation. Be sure there are no lice, especially on the head and between the flight feathers on the wings. Where is where the lice delight to stay, whether it be turkeys or hens.

"Always look out for lice, and when found dust every turkey, or, if preferred, place a drop or two of lard or castor oil on the head, under the wings, and around the vent. Repeat once a week. Do not use too much, or it will hurt the turkey. If we wish to take care of the little fellows, then we should proceed as follows: Use a roosting coop, and have a board bottom. Have it little smaller than the coop,



BRONZE TURKEY.

"The coop will just clear it when down. Each morning clean this off, and re-sand with coarse sand if possible. The ground is usually damp during the early spring months, and dampness is fatal to young turkeys, especially when cooped. Build a little pen, either of 12-inch boards set up edgewise, or use 12-inch wire netting on frames, inch mesh. The turkeys should be confined to the coop and pen for about five days, when the boards can be removed and only used on damp days. After the seventh day open the coop on all clear days and let the hen and brood run, but be sure to get them back at night, and do not let them out until the dew is off the grass.

HOW TO FEED.

"Feed about the same as for chickens. Commence when the turkeys are about 24 hours old. Rolled oatmeal for the first two days, and then stale bread can be given. A little chopped onion daily is also beneficial. Milk is a good drink, and milk curd is excellent. In fact, they should be fed the same as chickens. Feed every two hours for the first month. Always feed on a clean board and what they will eat up clean in about 10 minutes. Do not keep feed before them all the time. It is worse than folly. What would we think of a farmer who would keep corn and hay before his horses all the time? It would soon ruin them and it would do the same for poultry. Each morning carefully look the turkeys over, and, if any look droopy, examine for lice, and at the same time give each ailing one a grain of whole black pepper. Keep a dish of grit and one of charcoal before them all the time and add ground bone to the soft scalded feed after they are a week old. The feed may be scalded



NARRAGANSETT TURKEY.

the same as for chickens, only give the milk curd once or twice a day, at the morning and afternoon feeding time.

"As we stated above, we recommend the go-as-you-please plan when a turkey hen is used and the weather is mild, or after June 1. We have had turkeys raised thus, without a particle of feed or care from us, and the young ones have weighed 20 pounds and over by Thanksgiving.

## A FREQUENT MISTAKE.

"A costly mistake is often made by people selling all the large, early-hatched birds because they will bring more, forgetting, apparently, that next year's hatches depend on this year's stock. The best is none too good, and avoid in-breeding as you would the rump. Two-year-old hens mated with yearling toms will give stronger chicks than will yearling hens, even if mated with two-year-old toms. In fact, turkeys three and four years old will give good results as breeders, but they will not lay as many eggs as yearling hens. One reason for this is that old turkeys get fat more readily than young ones, and fatness will decrease the number of eggs every time. Keep them in good, healthy con-

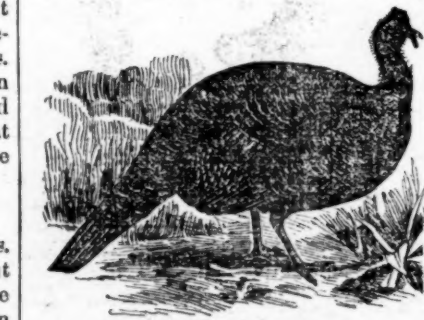


BLACK TURKEY.

dition and in moderate flesh. Turkeys will not stand confinement. They are an American bird, and as such love liberty. They dearly love the turnip patch and cabbage patch; otherwise, they will do little harm, and they will destroy an amazing lot of injurious insects during a season. It is the usual custom to have one tom with seven hens, but if the tom is vigorous, he will mate with 12 hens. In fact, that is the usual number of turkey hens to a tom on our farm. We find the eggs very fertile with such mating.

"We do not claim that turkeys will always do the best if allowed to take care of themselves. Many things should be taken into consideration. If hawks or other destroyers are about them, we should be very watchful. Such practice will not do early in the season, and even later it is best to teach the hen and brood to come up to the barn at night, thus gaining a good supper of whole wheat, and, if not off too early, a breakfast of the same will hasten maturity.

"Let us go over the ground again for these early hatches. Have the coop roomy and dry, with a board floor. Keep the floor well sanded, and build a small yard in front of coop by standing up boards, so the little fellows can be confined for the first week. As the hen hatches remove part of the turks as they dry off, and occasionally remove the shells, for they are apt to slip over an unhatched egg and thus kill the chick. If the hen is wild or very cross it is best to leave her severely alone. After all are hatched, and about 24 or 36 hours old, remove all to the coop



OCEANIC TURKEY.

and feed the hen first, then encourage the little ones to pick up small pieces of hard-boiled egg crumbled for them, but only feed the egg clear the first day; after that time feed it mixed thoroughly with twice the amount of bread crumbs, or feed as stated above. Discard the egg after the third day and give oatmeal and bread crumbs every two or three hours, and only what they will eat up in about five minutes.

"Keep the hen well fed with wheat, corn, etc. The bread crust can be soaked in milk and squeezed dry before feeding. Give milk to drink, and if a saucer is used place a heavy board partly over it to prevent suicide. Give milk curd frequently, for it is excellent for them. If the weather is damp mix, once a day, a little pepper in their food.

"When the turks reach the advanced age of one month, then cracked corn and whole wheat should be given at night, and as they grow the corn and wheat, especially wheat, can be increased until it composes their whole ration. After they reach a week or two of age, then on pleasant days, the turkey hen may be liberated; but at this time we should be careful to let her roam only in the direction we wish her to go, for if taught this lesson at the start, she will usually follow the same path during the remainder of the season. Before the turkeys become full feathered we should keep our eye on the weather, and if a storm threatens, gather all in their coop or prepare to bury the dead. Turkeys cannot stand a wetting until they are full feathered, when they can be trusted to look out for themselves. Keep everlastingly at the lice, for they are more to be feared than all else combined. We cannot raise a crop of lice and a crop of turkeys at the same time. Lice and dampness will cause a turkey famine sure.

## Care of Chicks.

If the hens have a free range the chicks may be allowed to run at large after the first few weeks, but they should be kept in the coops until the middle of the forenoon. It is well to remember that a limp and apparently lifeless chick which has been caught in a sudden shower may often be warmed back to life by placing it near the fire. A hen running at large will raise her brood with less feeding than one confined in a small lot, but the chances are that she will lose more of them. Not only are they caught by hawks, but there are other dangers which beset them. Most provoking of all is to have your neighbor's cat dine off chicken daily while you wonder how Biddie manages to lose one or two chickens every day.

It must never be forgotten that the coops as well as the feeding and drinking vessels must be kept clean. Filth breeds disease always and everywhere. The mites, which are so annoying, especially in warm weather, soon infest an unclean coop.

The first two or three weeks they will need to be fed about five times daily. "Little and often" is a good rule to follow in feeding. Cornbread made by mixing the meal into a batter with using twice as much soda as for the table. This quantity of soda will make the bread crumble readily. If the skim milk is not fed to the calves or pigs it can be given to the chickens to drink.

As soon as the chicks are old enough to eat wheat, give all they will eat for the last feed at night. Cracked corn may alternate with the wheat, and at a later period whole corn.

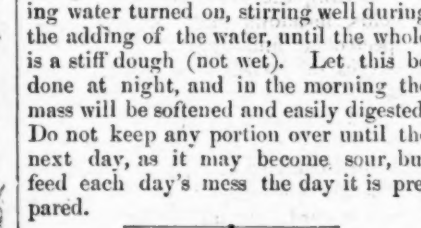
To sum up in a single sentence: Feed and water often; keep dry and clean.

## Uniformity.

It is desirable that the hens lay large eggs, and while some breeds lay larger eggs than the average, yet there are individual hens of all breeds that excel in that respect if the conditions are favorable. What is meant by large eggs is not such as may be of abnormal size, or approaching those which contain double yolks, only the hens that are overfat lay double-yolked eggs, but eggs of an average size and uniform in appearance. When the eggs are uniform in size and shape, and bring better prices. When pullets are just beginning to lay it is more usual for the eggs to be small than of average size, and the same thing happens to both hens and pullets when they are near the end of their laying period, especially when about to moult. The feed, also, has something to do with the matter, as it has been noticed that hens which are well fed and receive a liberal allowance of corn lay larger eggs than do those which receive a less quantity of grain, but there is no uniformity in the size of eggs from a whole flock, as the hens differ. Even two sisters may lay eggs entirely unlike in every respect.

"We do not claim that turkeys will always do the best if allowed to take care of themselves. Many things should be taken into consideration. If hawks or other destroyers are about them, we should be very watchful. Such practice will not do early in the season, and even later it is best to teach the hen and brood to come up to the barn at night, thus gaining a good supper of whole wheat, and, if not off too early, a breakfast of the same will hasten maturity.

"Let us go over the ground again for these early hatches. Have the coop roomy and dry, with a board floor. Keep the floor well sanded, and build a small yard in front of coop by standing up boards, so the little fellows can be confined for the first week. As the hen hatches remove part of the turks as they dry off, and occasionally remove the shells, for they are apt to slip over an unhatched egg and thus kill the chick. If the hen is wild or very cross it is best to leave her severely alone. After all are hatched, and about 24 or 36 hours old, remove all to the coop



OCEANIC TURKEY.

and feed the hen first, then encourage the little ones to pick up small pieces of hard-boiled egg crumbled for them, but only feed the egg clear the first day; after that time feed it mixed thoroughly with twice the amount of bread crumbs, or feed as stated above. Discard the egg after the third day and give oatmeal and bread crumbs every two or three hours, and only what they will eat up in about five minutes.

"Keep the hen well fed with wheat, corn, etc. The bread crust can be soaked in milk and squeezed dry before feeding. Give milk to drink, and if a saucer is used place a heavy board partly over it to prevent suicide. Give milk curd frequently, for it is excellent for them. If the weather is damp mix, once a day, a little pepper in their food.

"When the turks reach the advanced age of one month, then cracked corn and whole wheat should be given at night, and as they grow the corn and wheat, especially wheat, can be increased until it composes their whole ration. After they reach a week or two of age, then on pleasant days, the turkey hen may be liberated; but at this time we should be careful to let her roam only in the direction we wish her to go, for if taught this lesson at the start, she will usually follow the same path during the remainder of the season. Before the turkeys become full feathered we should keep our eye on the weather, and if a storm threatens, gather all in their coop or prepare to bury the dead. Turkeys cannot stand a wetting until they are full feathered, when they can be trusted to look out for themselves. Keep everlastingly at the lice, for they are more to be feared than all else combined. We cannot raise a crop of lice and a crop of turkeys at the same time. Lice and dampness will cause a turkey famine sure.

## CHEWED A TON.

After Three Years, S. D. Robey, M. D., Reports His Cure.

His Professional Advice to His Fellow-Sufferers: "Take No-To-Bac and Be Yourself Again."



There is one—only one—No-To-Bac—and it is absolutely guaranteed. Thousands have been cured, and millions will be, if they only know how much good it will do for them. Is your condition any worse than Doctor Robey's? He was cured long ago, and writes under late date as follows:

"SHEL, ILL., September 23d, 1895. 'Gentlemen: I write you a note in praise of No-To-Bac, which I took nearly three years ago. I had been using tobacco nearly 50 years. The habit had grown on me to such an extent that it required a pound every ten days. It so affected my nervous system that I could not sleep, had no appetite and was used up generally. On the 19th day of January, '93, I commenced the use of No-To-Bac and gained 15 pounds the first month. No-To-Bac entirely destroyed my desire for tobacco, and I have not tasted the weed since. I am now 30 pounds heavier than when I used tobacco, and I would like to say to every one who uses tobacco, 'take No-To-Bac, and be yourself again.' 'Very respectfully yours, 'L. D. ROBEY, M. D.'"

Are you a sufferer from disease that you long to cure, and all the time using tobacco? No-To-Bac is sold by your own druggist under absolute guarantee of cure. Start your new manhood today. Get our booklet 'Don't Tobacco Spit and Smoke Your Life Away.' Written guarantee of cure and free sample mailed for the asking. Address The Sterling Remedy Co., Chicago or New York.

## THE APIARY.

The medical journals are recommending a paste of pulverized ipecacuanha as a local application for bee stings. It is announced that a French naturalist has invented an instrument which he terms a "glossometer," for measuring the tongues of bees.

## The Work of Bees.

A writer in the *Revue des Sciences Naturelles* makes the following calculations in regard to the work done by the honey bee: When the weather is fine, a worker can visit from 40 to 80 flowers in six or 10 trips and collect a grain of nectar. If it visits 200 or 400 flowers, it will gather five grains. Under favorable circumstances, it will take a fortnight to obtain 15 grains. It would, therefore, take it several years to manufacture a pound of honey, which will fill about 3,000 cells. A hive contains from 20,000 to 50,000 bees, half of which prepare the honey, the other half attending to the wants of the hive and the family. On a fine day, 16,000 or 20,000 individuals will, in six or 10 trips, be able to explore from 300,000 to 1,000,000 flowers; say, several hundred thousand plants. Again, the locality must be favorable for the preparation of the honey, and the plants that produce the most nectar must flourish near the hive. A hive inhabited by 30,000 bees may, therefore, under favorable conditions, receive about two pounds of honey a day.

## Spraying Fruit Trees.

The benefits to be derived from spraying fruit trees is now so well known that tens of thousands of farmers and fruit growers are looking for a good spray pump. It is difficult to determine which of the many pumps advertised is best, as all pumps look well on paper. There is no safer way than to take the advice of our leading State horticulturists and fruit growers, and profit by their experience. First they tell us that brass is the only material that will withstand the action of chemicals used in spraying. You should therefore buy an all-brass pump, as cast iron soon rusts, corrodes or breaks and becomes worthless. Second, they tell us that the pump should be fitted with fine spray nozzles and a good quality of hose. Third, that the pump should be easy to operate. Fourth, that it should have a reliable automatic mixer. Fifth, that it should have expansion valves, and sixth, (we add), the manufacturer should guarantee satisfaction. If they will not do this you are buying a "cat in a bag." It gives us pleasure to call attention to our readers to the spray pump manufactured by the F. C. Lewis Mfg. Co. of Catskill, N. Y. We believe their pumps fully meet all the requirements, as they are made under the supervision of a man of high standing in the horticultural world. They furnish either the fine grading spray nozzle or Vermont nozzle. Their pumps are equipped with reliable expansion valves and are guaranteed to last for three years and guarantee that each pump sold shall give absolute satisfaction or money refunded, and they are endorsed by the leading entomologists of the E. S. B. would suggest that parties interested in spraying write them for their illustrated catalogue and full treatise on spraying, which will be sent free.

**Against the Beef Trust.** At the request of Gen. John C. Black, United States District Attorney at Chicago, Judge Grosscup will soon issue an order for the convening of a grand jury in the Federal Court on May 11, when the evidence gathered against the alleged "beef trust" of Armour & Co., Swift & Co., and Nelson Morris & Co. will be presented to the grand jury.

## Making Rain in India.

A rainmaker in India has an apparatus consisting of a rocket capable of rising to the height of a mile, containing a reservoir of ether. In its descent it opens a parachute, which causes it to come down slowly. The ether is thrown out in fine spray, and its absorption of heat is said to lower the temperature about it sufficiently to condense the vapor and produce a limited shower.

**The Rabbit Plague in Australia.** Australia has found it impossible to abate the rabbit plague. In New South Wales alone 7,000,000 acres of land have been abandoned and £1,000,000 spent. The only plan that has any good effect is wire netting, and of this 15,000 miles have been used.

**Beecham's pills for constipation 10¢ and 25¢.** Get the book at your druggist's and go by it. Annual sales more than 2,000,000 boxes.

## THE MARKETS.

## Produce.

NEW YORK, April 28.—Butter.—There was a fair demand for State dairy half tubs. Values are rather firm. Fresh creamery is in very good demand. We quote: State dairy, half-drain tubs, fresh, 13 a 13 1/2; creamery, fresh, choice, per pound, 12 1/2 a 13; creamery, fresh, fancy, per pound, 13 a 14; creamery, fresh, choice, per pound, 14 a 15; creamery, fresh, fancy, per pound, 15 a 16; creamery, fresh, choice, per pound, 16 a 17; creamery, fresh, fancy, per pound, 17 a 18; creamery, fresh, choice, per pound, 18 a 19; creamery, fresh, fancy, per pound, 19 a 20; creamery, fresh, choice, per pound, 20 a 21; creamery, fresh, fancy, per pound, 21 a 22; creamery, fresh, choice, per pound, 22 a 23; creamery, fresh, fancy, per pound, 23 a 24; creamery, fresh, choice, per pound, 24 a 25; creamery, fresh, fancy, per pound, 25 a 26; creamery, fresh, choice, per pound, 26 a 27; creamery, fresh, fancy, per pound, 27 a 28; creamery, fresh, choice, per pound, 28 a 29; creamery, fresh, fancy, per pound, 29 a 30; creamery, fresh, choice, per pound, 30 a 31; creamery, fresh, fancy, per pound, 31 a 32; creamery, fresh, choice, per pound, 32 a 33; creamery, fresh, fancy, per pound, 33 a 34; 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## ABOUT WOMEN.

**QUEEN VICTORIA OBJECTS TO** women bicyclers. She is the only woman now on record who does.

**THERE IS CONSIDERABLE** talk about women having good bicycles, jewel mounted, which is all pretty, and sounds compatible with fabulous wealth and extensive desire to show it off, but the fact remains that most women, wealthy or otherwise, ride the ordinary wheels of a good make. There are some little fancy silver attachments for the bicycle that a girl may collect, as she does for her work-basket, writing-desk, or dressing table.

**A RECENT FUNNY PAPER—**Truth—had a delightful picture. In the foreground were a lot of bicycle girls all rigged out in bloomers and gaiters, neckties and pockets; but they were all dismounted, had come to a complete stop, and were gesticulating and wondering and hesitating because down the road in the background were a few mild, placid cows. The girls could not get past them. Even the chaperone had betaken herself to the side of the road near the fence.

**WORDSWORTH LOVERS HAVE** erected a fountain at Cockermouth in memory of the poet and his sister. William and Dorothy were born near the place, and the fountain bears this inscription:

"Who cannot feel for every living thing  
Hath faculties that he had never used.  
It is a pleasure to hear of this tribute  
To the memory of the brother and sister.  
Their friendship for each other was fine  
And sweet, and their enjoyment of Nature  
Intense, their thoughts true and beautiful,  
And the fountain will be a reminder  
Of strong lives not lived in vain."

**THE EMPRESS AND EMPRESS** of Russia are to be crowned in May, and such a gorgeous ceremony as it will be never heard of before outside of fairy stories. There will be gilt chariots to carry the royal couple from place to place; there will be heralds to announce them, and armies of soldiers to escort them. High priests, chancellors, foreign envoys, festivals, illuminated cities, robes embroidered in jewels—these are all phrases from an old-time romance, and have a dreamy and impossible sound to Americans in these busy, democratic days, but I suppose it is all possible over in Russia.

**THAT SINGULAR WOMAN, MISS** "Middy" Morgan, who for 20 years wrote the best reports of the cattle market printed by the New York papers, while not afraid of vicious cows or even of that terror of womanhood, a bull, was mortally afraid of burglars. In the little house where she and her sister lived, on Staten Island, there were no stairs to the second-story, but a ladder, which the two women pulled up after them when they went to bed.

Miss Morgan confided to a friend of the writer that she kept several cannon balls near her bed in readiness to drop on the head of a burglar bold enough to break in below.—Philadelphia Press.

## HOME TABLE.

Being a constant reader of your valuable paper, and finding a great many helpful recipes contributed by sisters, I will send you some recipes I have found very successful.

A great many farmers' wives think that scraps of cold boiled beef left over are of no use, when, with very little trouble, they could make a very good dish with them. To two cups of cold boiled beef chopped fine add one or one-half cups of bread crumbs or broken crackers, a small piece of butter, one egg well beaten; season with pepper and sage; mix well, make out in cakes and fry in hot butter or lard. If the egg does not make it soft enough to mix well, a little milk or hot water could be added. Other meats will do quite as well as beef.

**SOFT GINGERBREAD.**  
One egg, three-fourths of a cup of lard, one cup of sour milk, one cup of molasses, two teaspoonsful of ginger, two and one-half teaspoonsful of soda, flour to make a stiff batter; bake in a slow oven. To be served hot.—OLLA D, Hunter, O.

A well-made gruel, made with cream, is said to be more fattening even than cod liver oil. A teaspoonful would be taken every night.

**Household Hints.**  
In cooking cabbage put a small piece of red pepper into the pot.

Have the flour barrel raised a few inches from the floor, so that the air may circulate under it. Keep the barrel covered. Flour absorbs impurities as quickly as milk and butter do.

Boiled eggs to slice for salads or for spinach should be put on in cold water and allowed to come to a boil and then be kept boiling 15 minutes. Let them cool in the same water.

This recipe is for a compound known as "Zephyr's" gums: One cup of cold boiled barley, one cup of sweet milk. Add this to two slightly-beaten eggs, and when the lumps are all crushed gently stir in one cup of flour and a little salt. Pour into hot-lardened gum pans and bake immediately.

## FASHION'S FANCIES.

A wrapper of flowered chaille or silk is shown in the cut. The collar and sleeve ruffles are of plain silk, matching the flower in color and edged with white lace. The style would be pretty for dark blue flowered stuff, with the collar



of plain dark blue silk edged either with white or black lace. For a daintier toilet a white chaille, flowered with tiny roses, and with rose-pink collar and ruffles edged with Valenciennes lace, would be dainty. The wrapper to be graceful needs long lines. Let it touch the floor all around and trail a bit in the back. The sleeves are cut after the Bishop pattern—a little short to allow for the wide ruffles.

One of the neatest styles for a street dress is shown. The skirt is of checked wool—dark blue and white—with a jacket of plain dark blue and the full front of the vest of the checked stuff.



Big white pearl buttons are used to trim the jacket, and the square lapels are faced with a narrow bias band of the same material. This combination of checked and plain material is very neat and pretty, and is stylish in blue and white, green and white, or brown and white. Sometimes the shirt-waist suits are in this combination, a checked skirt taking the place of the usual blue serge, with the blue jacket and blue tie and belt.

Narrow belts of white leather are stylish and pretty with skirt waists, and especially so with duck suits.

A frock for a small girl is shown. The style is suitable for either wool or cotton goods, and with the full front, the ruffles over the shoulders and the well-



fitting yoke, it is exceedingly graceful and comfortable for the small maiden. The ruffles may have a row of ribbon set above the hem for a wool frock, or of insertion for a cotton frock.

## Do Texas Foxes Climb Trees?

A correspondent of a sportsman's paper declared recently "there is little sport to be had in hunting foxes in Texas, because they climb trees in 10 or 20 minutes after the dogs start them." The foxes in England are often driven to the trees by the eager dogs, but they do not climb in the sense that a squirrel or bear does. They jump to the lower branches of the trees and by their aid work themselves up to the top branches. A fox can get up a tree that is no higher than eight feet to the lower branches, and it is probably by jumping that the Texas fox gets into the trees.

## WOMAN'S WISDOM.

**Flowers for the Children.**  
Nearly all children love the sight of flowers, and, if for no other purpose, we mothers should grow at least a few for their benefit. The older ones should have a place that they may call their own, but for the little tots of from one to five years of age we should take the trouble to prepare a bed for them. How they enjoy to go out by themselves and pluck the blossoms! Sow in this bed for them all the pretty bright flowers, such as phlox, poppies, sweet peas, pansies, petunias, pink, and others that you think they will enjoy picking. Let them understand that this bed is for their own use and that they may pick them whenever they wish. They can be made, also, to let your own flowers alone, if you do not wish them picked. There are many kinds of flowers that will blossom more by being picked than when they are left to grow.

Teach your children that it is very thoughtful to carry bouquets to their teachers, neighbors, and especially to the sick. By doing this they are teaching them a lesson in kindness and enjoying it. As my friend said right here I want to enter a protest! No one has the opportunities for more true pleasure than the farmer, and no one has more right to enjoy it. We were created simply to work. If that was the chief end of our existence, why did the loving Father create so fair a place as Eden—beautiful, perfect in every detail.

## REPLY TO E. C.

**A South Dakota Sister Takes Issue with Her.**

In your March issue, "E. C." writes on the "suffrage question," and her first remark is: "I wonder how many of the women of this department are interested in the suffrage question?" In reply I will say I hope every woman and every man. As for myself, I will say it is a question of deep interest to me, almost an all-absorbing interest. I feel that upon the question of simple justice rests the ultimate success or failure of our boasted republic. It is a question of space that I presume our indulgent editor can spare to reply to each and every line of thought presented in E. C.'s article; and, much as I should enjoy doing so, I will refrain, and reply simply to the article as a whole briefly as possible.

All the advantages women now enjoy, and which your correspondent seems to approve, have come to us only after long years of constant effort by heroic men and women. Not one "right" has been accorded her without persistent and untiring labor on the part of those who have been so long and so firmly, immovably, against public sentiment, often receiving for their reward ridicule and condemnation from those who have since repented the reward in an equal education, legal and religious rights.

Even the rights of our children were not conceded us until long years of labor had been bestowed; and in some States (South Dakota included) to-day mothers have no legal right to their own children. The father can in this State have a guardian appointed for the children while the mother is yet living. The only child that can be legally held by its mother is the illegitimate child; and yet your correspondent asks: "Will we not lose more than we gain; can we make better laws for our protection than men have made for us?" In all sincerity I would ask: Could we not improve on the law as regards the mother and child? "The good men want to protect their wives and daughters, is why they object to giving them the ballot," says E. C. Why, bless your dear souls, we don't want your protection; we simply want the God-given right to protect ourselves. Our forefathers waged war against the mother country for no less a crime than "taxation without representation." Arizona to-day is asking to come into the Union on the same plea. Now, gentlemen, we are only asking you to be consistent. I sometimes wonder if the men of this Nation ever tried to "put themselves in our place." And if they should, would it not work miracles for us?

They secured their liberty at the point of the bayonet. We shall secure ours at the point of the pen. For, as you say, "it is mightier than the sword," I hope by a diligent and wise use of the same to convince them that what is right for them is right for us, and that "taxation without representation is tyranny" for man, it is also applicable for woman. Again, E. C. says: "A woman generally has more than her rights." In a question of law that affects her interests, I will cite just one instance that has come under my personal observation. A woman in a city having been left a widow at the close of the war, with only a widow's pension, and four small children, has so successfully managed that at the present writing she has a fine home, owns several farms and several private dwellings, besides a half interest in one entire business block. She has educated her three sons. One is a rising lawyer, one a traveling man, and the youngest a doctor. Her daughter has been an invalid from birth. She pays as large a tax as any one man in the city.

The city fathers are about to bond the city to raise money for a capital bond. She goes before the Council and pleads for a loan. She sees clearly that the capital fight will be for her, for her city is not centrally located, either geographically or as regards actual settlers. The city fathers listen to her respectfully, but heed her not—she has no vote. They bond the town, her taxes are raised; she is compelled to pay them or have her property sold—just like a man, without redress—not like a man.

Has she had "more than her rights" accorded her by man?  
I agree with E. C. when she says "in no country are women so treated with respect and consideration as this." But we shall lose none of our natural refinement, none of our womanliness, and the men will not cease to show us that "deference and consideration" when we shall have arrived at that point of dignity that will come with our use of the franchise. Nay, rather, I predict, true gentleman will accord us more genuine respect when we cease to be "clinging vines," but will become a helpmeet in the true sense of the word.

"Woman's independence is unbounded in the home circle." Ah! yes; but I caution it shall not stop there. It takes no more time to go to the polls and cast a ballot than to go to the postoffice and receive the mail, where we meet the same men. And for the life of me I do not see why she should not do it.  
Lastly: "She goes out of her sphere."  
They talk about a woman's sphere. As though it had a limit.  
There's not a place in earth or heaven,  
There's not a task to mankind's lot,  
There's not a blessing or a woe,  
There's not a life or death or birth,  
There's not a feather's weight of worry,  
Without a woman's hand to guide.

## Trees as Pumps.

Trees are the great water lifters. The wise men tell us that an oak tree of average size, with 700,000 leaves, lifts from the earth into the air about 123 tons of water during the five months it displays its foliage.

## FREE TO SUFFERING WOMEN.

I am free to give you a recipe for a compound known as "Zephyr's" gums: One cup of cold boiled barley, one cup of sweet milk. Add this to two slightly-beaten eggs, and when the lumps are all crushed gently stir in one cup of flour and a little salt. Pour into hot-lardened gum pans and bake immediately.

## PLEASURES OF FARM LIFE.

**An Attractive Picture of the Happiness of Dwelling Near Nature.**

[Read at New Castle Institute, by Miss Elizabeth J. Grandy, Waukegan, Pa.]  
It has been said: "Man made the town, but God made the country." God truly made the country, for only the hand of Omnipotence could spread out before us the beautiful panorama of field and dell, leafy wood and sparkling rill.

Well might the psalmist exclaim, as the power, majesty and goodness of the Creator swept o'er his soul: "The heavens declare the glory of God, and the firmament sheweth his handywork." What perfect joy there is for one who tries to read God's book from all he sees in nature. And what a pure joy it is to feel the breeze blow the pure air, to feel one's eyes on the green fields, the graceful flowers and the profusion of beautiful flowers blooming around us. But of what use are all these glories of nature to the farmer? Why the living beauty of bud and plant, when we are so busy, have so little time to pause and enjoy it? As my friend said right here I want to enter a protest! No one has the opportunities for more true pleasure than the farmer, and no one has more right to enjoy it. We were created simply to work. If that was the chief end of our existence, why did the loving Father create so fair a place as Eden—beautiful, perfect in every detail.

True, when he placed Adam and Eve there, he told them to dress it and keep it in order; but, oh, I am sure that he who spared no pains to make it a perfect abode for man, was more than pleased when they passed to Eden and magnify the wonderful beauty of his handywork. In that magnificent work of John Milton's, "Paradise Lost," he tells how mother Eve thought that while Adam and she worked together, they did not accomplish as much as they should, because they paused, and ever and anon, to admire and exclaim some new beauty of creation, or to discourse on the love and goodness of God; and she proposed that they should work apart, and then at evening recount all their discoveries and joys. Adam thought not so; that God who had created them, for a purpose, could not be displeased if some little of their time was spent in enjoying the beauty around them, and thought it better for them to work together. But Eve, with the wilfulness characteristic of her sex, had her own way, and the very first day she worked alone she fell.

So it is oftentimes in attempting to accomplish much we fail miserably. Dr. Talmage says: "He who has such an idea of the value of time that he takes none of it for rest or pleasure wastes all his time." Can it be possible that the Doctor is correct? Is it true that he who follows a treadmill line of work, day after day, month after month, and year after year, never allowing any time for enjoyment, never pausing to worship the great architect by admiring and praising his work, is really wasting his time?  
Our time in this world is a sacred trust, given us by God, and for every second of it we must give an account unto him. I truly believe that he not only allows but desires us to get all the true pleasure out of life that we possibly can, and, as I said before, the farmer has countless fields for pure pleasure. In a few short weeks the fairest time of all the year will be with us, and also one of the busiest for the farmer.

But, oh, this Spring, if we have never fully done so before, can we not make it a memorable Spring by giving it to God? Is it even possible, and hardly so many beautiful pictures on memory's walls that our hearts will always glow young when we gaze on them?  
Every farmer will be trying to get in his corn and potatoes and oats. Those are good crops to put in, my friend; but I want to remind you who have children that you are bound, whether you will or no, to put in a double crop. Let me explain with an illustration. It is a bright, beautiful Spring day, and farmer John is plowing with a white horse to the south, the birds are in the flowers; but when the merry ringing laugh of a child comes to him, he pauses to look over into the next field, and sees farmer Smith also plowing, but perched astride one of the horses is a tiny tot of a boy who seems to be shouting over with pure happiness, while his father faces the sun and the day.  
With a frown on his face John exclaims: "Smith is a fool; he had much better be getting his crop in this fine weather than fooling with that baby."

My poor friend! that is just what he is doing—putting in two crops, and putting them in well.  
What the harvest of one will be only eternity can tell.  
Parents, you know not, unless you go back to your own childhood, how much and how easily you can make or mar the pleasure of your children.

Think you the little tot on the horse will ever forget his father's love and kindness? Think you the father's heart was not gladdened and his work lightened? For love does lighten labor.

Do you not believe, oh mother, busy in the dairy or over the wash-tub, that if your little children come to you some bright Monday morning, when there is so much to do, with delight over the discovery of a bird's nest in the grape arbor, and beg you to come and see it, that to go? Just try it once, if you doubt it. And, as you gaze on that tiny new home, see if your thoughts do not go back to the time when you began housekeeping, and the bright sunshine, the sweet song of the birds, and the unbounded joy your little ones will find in you, with such a sweet content that work will become a joy.

Or, if the children come to you with hands and aprons running over with woodland treasures, do not send them out for fear they will litter up your house. Much better will it be for you, in years to come, that they should litter the floor than for you to mar their pleasure and cloud their joy. Nay, share their joy by examining their treasures with them. Fill glasses and bowls with all worth saving, and you will find that they will be willing to carry out the rest.

Mother, you cannot keep your children always. Enjoy them while you may. All too soon will they grow up and leave the home nest; perhaps they will leave it even sooner than that story I told you long since bears upon this point. So strongly that I beg leave to repeat it. A tired, overworked woman was busy in her kitchen one bright day. The birds sang, the air was sweet with perfume, the sun shone brightly, but, like Martha of old, she was troubled with many cares. There was supper to get for many hungry men, and the hundred and one things that a farmer's wife must do. And she wondered if life was really worth living.

In the middle of 1861 came her two little girls, begging her to play with them and help with their playhouse. She was about to send them hastily and not too gently away, for she was very tired, when a subtle instinct caused her to yield and go with them, and for an hour the three spent a joyful time. The look of care left her mother's face and her heart was filled with a sweet peace, and when she returned to her work she was surprised to find how much easier it was and how much she could accomplish. And when on the morrow one of her darlings sickened, and in less than a week she had to yield it up to the one who gave it, she thanked God that she had enjoyed with it its last well day on earth.

that they take the first opportunity to escape from it.

But not alone is the Spring a time of pleasure on the farm. Summer, Autumn, and Winter each brings its own distinctive pleasures.

Who can stand by the waving field of golden grain, the meadow with its billowy green, or gaze on the early fruit ripening on the bough, without feeling his heart beat with pleasure? Or, again, as the last load of a bountiful harvest is stowed in a well filled barn, does not the heart go out in gratitude to God for his goodness? Oh, the pure delight of a Summer morning! As we stand in the early dawn and watch the sun rise in splendor, as the pure air fans our cheeks, and the bird's morning hymn of praise sounds in our ears, as we draw in deep breaths of air fragrant with the perfume of flowers, can any one help thanking God for a home in the country?

Then comes the Autumn with its flight of birds, its ripened fruit, its rows of corn shocks, from which the yellow ears peep out; the golden and green pumpkins; the turnips, with its brilliant green top, showing the toothsome globe beneath; the drooping nut, the chattering squirrel, and the woods robed in such splendor of color as no painter's brush can equal. My friend, you must take time now to go forth and drink in large draughts of the pure air and store your memory with picture after picture from nature.

Then comes old Winter, with his hoary head, and jack frost paints the most delicate lace-work on your windows, and some morning as you rise and gaze abroad, and find everything clothed in spotless ermine, and the sun comes up and lights up the whole till it look like a fairy scene, you are ready to cry out with Longfellow, in "Elizabeth Haddon": "How grand is the Winter; how spotless the snow is and perfect."

What if the wind does blow and the rain does fall, and the place of snow, as it did this Winter? Why, just make the fire-side so much the brighter.  
Who can read that beautiful family story by Whittier, "Snow-Bound," without rejoicing in the pure enjoyment of Winter family life as he depicts it? But Winter is to many farmers a trying time, for, compared with the Winter of a former century ago, there is little now to do. Then there was timber to cut, clearings to be made, stone walls to be built, etc. In the house it was just as busy, besides the regular work, spinning, weaving and knitting was to be done. But now there are few clearings to be made, little timber to cut, and the wheel and loom have been put away; even the knitting needles are no longer a familiar sight. But Winter may and should be one of the most profitable and pleasant times of the year to the farmer.

Every good and useful book or paper he reads is an acquisition, the value of which cannot be stated in dollars and cents. Some say: "I cannot afford to take papers and buy books." I beg your pardon, but you cannot afford not to.

When one can get such magazines as McClure's and the Commonwealth for \$1; when the works of some of our very best authors can be obtained, cloth bound, for from 18 to 25 cents; when good newspapers can be obtained very reasonably, there is no excuse for not having reading matter.

Winter is the time for improving the intellect, the time to lay up those stores of knowledge which will serve in an old age, when the eyes are dim and the hearing impaired, as food for thought and meditation. And the quiet family life affords rare opportunities for this.

To the young in the country, Winter brings unbounded delight. And still more, parents, have you the power of enhancing the pleasures of your children and binding them so closely to you that no power on earth can break the tie. Share with them their sports, their readings, their every little joy. Let them play "blindman's buff" and "I spy" and "awhiggle" evening if they like. But, you say, they make such a noise, and turn the furniture around and wear out the carpet. Very true, I know, and that is a fact. But, oh, the pure, unbounded joy we got out of it, we stay with me while I live, and I have never heard my mother lamenting for her worn-out carpets, neither did she ever have any trouble keeping her children at home in the evenings.

Who then, who is in a hurry to get to live in the country, to perceive sweet odors borne on every breeze—melodious sounds on every side, and feel that God is there and sees his works, that they are good.

Oh, how blindly we go along, unmindful of the joy we are in, in existence—all the beautiful creation above and around us. The old familiar hymn:

"Praise God, from whom all blessings flow,  
Praise him, all creatures here below,"  
should swell in one grand chorus daily from hearts swelling with love and gratitude for all the beautiful things bestowed on mankind.

## The Girl on the Farm.

[Read at Mt. Pleasant, Jefferson County, Pa., by D. J. Shields, Pa., March 26 and 27, 1896.]  
There is no place that you will more surely find what you would call a true, honest, industrious girl than in the homes of our patriotic farmers.

A girl brought up on the farm by Christian parents is the one that is admired and respected above all other classes of society. Each one is taught, or should be, that it is no disgrace to do farm work, for their mothers were once girls and had to work a great deal harder than any girl at the present day.

The girl on the farm was not intended to do a boy's work, and not often she does. Her work is in the house, such as scrubbing the floors, washing the dishes, kneading the dough, milking the cows, if she has no brother, instead of letting mother do it, and doing all the general housework that pertains to a home.

Of course, we have some girls on the farm who think themselves above farm work. All they will do is play on the organ or piano, receive and entertain company and return their calls very promptly, and frequently visiting friends of her like in society in the city, chess game and read dime novels; while out in the next room we hear the tottering footsteps of a silver-haired mother, who is toiling hour after hour so that her home will be in tidy order, as it should be. Such a girl is simply living for her own enjoyment and is of no use on a farm.

Then, again, we have the jolly girl. She is always as merry as a lark, helping mother as if it was a pleasure, and not a task. You will always find her where the work is, and if any company is present mother is given the opportunity of entertaining them, while the work in the kitchen goes on as usual by the daughter.

A mother is proud of her daughter when she can trust her to do a mother's work, and well she might be.

## COST OF RAISING CORN IN KANSAS.

**Compilation of the Estimates of a Number of Practical Growers.**

Kansas is certainly a great corn State. Statistics show that the average annual yield for all the 34 years, bad seasons and good, since 1861 has been 27 bushels per acre for the entire State, ranging in different years from 9 to 48 4-5 bushels. The product for 25 years ending with 1895 has had an annual home value averaging more than \$31,000,000, and a total value in that time exceeding \$776,000,000.

Secretary Coburn, in the March quarterly report of the State Board of Agriculture, presents a detailed showing from 68 long-time, extensive growers in 45 Counties, which last year produced 140,000,000 bushels, giving from their experience, on such a basis as others can safely accept, each principal item of cost in growing and cribbing an acre of corn, estimating the yield at 40 bushels. About two-thirds of those reporting prefer planting with listers, and the others use the better-known check-row method after the land has been plowed and harrowed.

The statements of all the growers, summed up, averaged and itemized, show as follows:

## COST OF RAISING AN ACRE OF CORN.

Seed	.....	\$ 07
Planting (with lister, or with check-row planter, including cost of previous plowing and harrowing)	.....	17
Cultivating	.....	1 08
Harvesting and putting in crib	.....	1 18
Wear and tear and interest on cost of tools	.....	25
Rent of land (or interest on its value)	.....	2 41

Total cost.....\$5 71  
Cost per bushel.....14 1/2  
Average value of corn per acre.....29 25

The condensed showing made by the 43 growers who plant with listers, or have found that method preferable, is thus:

Seed	.....	\$ 07
Planting	.....	1 00
Harrowing	.....	25
Cultivating	.....	98
Harvesting and putting in crib	.....	1 18
Wear and tear and interest on cost of tools	.....	20
Rent of land (or interest on its value)	.....	2 35

Total cost.....\$5 41  
Cost per bushel.....13 1/2

Commenting on these figures, Secretary Coburn says: "In none of these calculations has there been made any allowance for the value of the corn stalks, which, ordinarily, under the crudest management, should offset the cost of harvesting the grain, and, under proper conditions, should have a forage value much in excess of such cost. Taking these into every estimate, as should rightly be done, the showing of cost per bushel would be very sensibly diminished. In the results of this investigation it will likewise be noted that the rental for these Kansas corn lands, or the interest figured by their owners on the investment represented, averages more than 8 1/2 per cent, or a net rate higher than the capitalist, general banker or money-lender dreams of realizing.

"Further, it should be understood that the thrifty Kansas farmer does not measure the profit of his crop by the narrow margin shown in such statistics between the items of 'cost' and 'value.' He does not, as a rule, anticipate selling his corn by the bushel at the figures given as 'value,' nor expect more if he did so than a moderate return, one year with another, for his labor and investment; it is the conversion of it on his farm into beef, pork, poultry, dairy and similar products, from which comes the surplus to make the comfortable homes and build the schoolhouses, colleges and churches that are such common objects on his horizon and so largely the measure of his ambition."

## He Raised 104 Bushels of Corn Per Acre.

Mr. J. A. Baxter, of Waverland, Shawnee County, Kans., who raised as high as 104 bushels of shelled corn per acre in 1895, furnishes the State Board of Agriculture the following account of it, together with some of his corn-raising methods in general:

"The portion of my crop giving a yield of 104 bushels of husked, well-dried (56 pounds, shelled) corn per acre was five acres of 57 I planted last year. My land is slightly rolling prairie, and about a fair average of Kansas soil, with a hard, impervious subsoil. The five acres mentioned were at one end of a 25-acre field, part of which had been in potatoes for two years, and the last crop dug with a listing plow late in October, which was about equivalent to a deep Fall plowing.

"In Spring the ground was much like a bed of ashes. It was then deeply plowed, made fine and smooth with a plank-drag and drilled the first week in May with a 'Farmer's Friend' planter of medium width, with a deep-grained yellow Dent corn; about the same quantity of seed was used as would have been if from three to somewhat less than four grains had been placed in hills the ordinary distance apart. This was cultivated four times with common gang-cultivators and hoed three times—the last hoeing after it had been finished with the cultivators.

"I am a strong believer in deep and thorough cultivation, and long since learned that a good crop of corn and a rank growth of cockle-burs, crab-grass and similar weeds cannot occupy the same ground at the same time. I have not subsoiled for previous crops, but last Fall invested in a Perine subsoiler and used it on 15 acres. I intend planting 100 acres in corn this season and aim to have it all subsoiled. An subsoiling my fields the narrow way first (they are from 40 to 80 rods wide and

120 rods long) as deeply as four horses can do the work, at distances of 2 1/2 feet. Will then throw up the ridges crosswise of this with a listing-plow, following it in each furrow with the subsoiler as deep as three horses can pull it, and drill the seed immediately in the track of the subsoiler. This will leave the land subsoiled in both directions.

"My whole crop for 1895 averaged only 57 bushels per acre, yet I would have made 75 bushels but for an unfortunate invasion just at the critical time by an army of chinch bugs from an adjacent 30-acre field of oats. With proper treatment of our soils and thorough cultivation, I am of the opinion that in all favorable seasons, such as last, we should rise from 75 to 100 bushels of corn per acre, instead of the more common 25 to 50 bushels. I am always careful to avoid cultivating when the land is very wet, and think many farmers make a serious mistake by working their corn when the soil cleaves from the shovels in chunks. The sun is likely to then bake the ground and the growth loses its bright, healthy green and turns a sickly yellow."

## A Plan for Steel Wagon Roads.

Steel wagon roads, as advocated by Martin Dodge, State Road Commissioner of Ohio, are likely to have a thorough trial in several States this year. These roads consist of two rails made of steel the thickness of boiler plate, each formed in the shape of a gutter five inches wide, with a square perpendicular shoulder half an inch high, then an angle of one inch outward, slightly raised. The gutter forms a conduit for the water and makes it easy for the wheels to enter or leave the track. Such a double-track steel railroad, 16 feet wide, filled in between with broken stone, macadam size, would cost about \$6,000, as against \$7,000 per mile for a macadam roadbed of the same width, but the cost of a rural one-track steel road would be only about \$2,000 a mile. It is claimed that such a road would last much longer than stone, and that one horse will draw on a steel track 20 times as much as on a dirt road, and five times as much as on macadam.—Chicago Tribune.





## BY ARBITRATION:

## A FLORIDA ROMANCE.

EARLY IN SUMMER County is on the road to "Big Ferrar," where an "arbitration" is to be held. So great a difference has arisen between the two most considerable owners of a couple of marsh colts that it can be settled in no other way. The Sumter men are not White Caps and lynchers; no, no. They are peaceable, law-abiding citizens, who arbitrate their little misunderstandings, with or without the consent of the principal, and he must be a fool or a very dead-end desperado who would attempt to resist or resent it.

As the Dekel, the alleged aggressor in the case, is along, the subject is not easily discussed. His friends ride in a company body, with him in the center. Energy Blake's friends are scattered over the pine woods, keeping a sharp eye out for their client, or—whatever one chooses to call him. This crowd is the more numerous by a third, for Blake's unspotted integrity and sunny temperament makes him both popular and respected. The complete unattractiveness of Dekel, outwardly and inwardly, is somewhat ameliorated by his reputation as "the richest man in Sumter," and so has his following. Money counts as high in the backwoods as in the great city.

Shifting a frog pond, they turn into a grove of pine saplings, where some preparation has been made for their reception. In the center are the colts, straining and tugging at their ropes in the greatest fright. One, two, and even three hunters they are pretty well used to, and can usually run away from; but to be tied hand and fast in the midst of a hundred is too much for their equine souls. Near them is a pile of axes; whether to brain the arbitrators or to build a funeral pyre for the colts does not at first appear. The riders halt in the edge of the grove and await the coming of Energy Blake. There is very little said. They chew their tobacco not indolently, and, but for their watchful, penetrating eyes, might be almost likened to a herd of stags, roaming in their natural haunts. The elders, in homemade cotton clothes, slouch in their saddles until their ragged beards nearly touch the shaggy manes of their ponies. The younger wear negligence suits, shawls, ties, and suits of the slop-shop type. They sit their ponies negligently, though not ungraciously, as get. The slouch may come later, but it will come. As the minutes pass, there is a slight restlessness in the crowd, and eyes seek the sun, the clock of the backwoodsman.

"We'd better build the pen," says Potter, the head arbitrator of Sumter for the last quarter of a century. "It's getting late. Energy'll be here by ten."

"Yes," says Posey. "I've got ter be 10 miles away by dark. Cut like you was a lightin' fire."

Several dismount, seize the axes, and proceed to cut down saplings, while others build a pen about three feet high, inclosing the colts.

"What is the pen for?" asks a man from another County, where they settle their quarrels with less hard work.

"Why, to pen up the arbitrators, the witnesses," he says. "What else could it be for? In fact, it would have been impossible for them to arbitrate outside of the pen."

"I say, can't we settle the furs?" asks Penny, who thinks all this a great deal of trouble.

"Settle it! Jewwhillikins! In course we'll settle it. That's what we're here for. Peaceable or unpeaceable; one or other. 'N' I wonder what's keepin' Energy."

Energy Blake, branding iron in hand, stands with one foot on the step and the other on the piazza floor. It is not quite his usual easy attitude nor his own erect, lanky air. Celie, who loves to relax, is sitting straight enough now regarding her father with large, troubled brown eyes, in which there is, too, a mark of untidy.

"Oh, pa! Me 'n' Hermie Dekel break off because our daddies are at outs! It's too late now. We've be'n sweethearts since we was little children."

"Yes, ever since Hermie put on pants," says her mother. "You know there ain't no sort of reason in that, Energy."

"A thing ain't got ter be reasonable ter be right," answered Blake, who is a thinking man, though an ignorant. "It oughtn't to go on. Old Dekel put his brand on my colts, 'n' it ain't the first time he's be'n suspected. Hermie's a fine young feller. I dunno a finer; but he's got roguish blood in him, 'n' that's something that's never be'n in the Blake family. And," he adds, after giving himself a minute to admire his daughter's beauty, "there's other besides Hermie Dekel that likes ter feed their horses in my stable. There's Winbush."

"Oh, pa! That idiot!"

"I don't care. There's nothing ag'in him. He's got plenty of money, 'n' knows how ter keep his hold of it. 'N' you could wrop him 'round your finger."

"I don't want a thing to wrop 'round my finger," pouts Celie.

"Why, Energy, he's of no account, only ter feed. He is the greatest dresser I ever seed," says Mrs. Blake.

"If you want Celie ter have a clo's pole, you can't do better than give her ter Winbush."

"I don't want Celie ter have anybody in petterick. I ain't goin' ter give her away without studyin' about it. 'N' there's Winbush now."

Winbush is, indeed, as homely as his crooked enemy could wish, with about as much apparent intelligence as the pole

to which he was likened. But his garb is immaculate, and his conceit overpowering. He rides awkwardly, and, though his horse is gentle, dismounts as if in momentary danger of being dragged away with one foot in the stirrup.

"Why don't he have somebody to take care of him, 'n' keep him off a horse?" says Celie, with contempt in her amusement. Her father grins in acknowledgment of the humor, though he throws an increase of cordiality into his greeting. The girl bestows on the visitor a brilliant, scornful smile, that he construes as a welcome.

"Going to brand some colts, Mr. Blake?" he asks, apropos of the iron in the hands of the other.

"Jest come from brandin'."

"You don't use your own initials, I see," looking more closely at the instrument of torture.

"Oh, yes; I do," turning the iron squarely to view. "Oh, yes; don't you see? N. B.—Energy Blake." He seems surprised at the visitor's ignorance.

"Oh, I see," replies Winbush, feeling floored. Then, desiring to change the subject, chooses the very one sure to arouse Blake's ire.

"Dekel's mill was fired last night; not burnt up, though. They formed a bucket brigade and put it out. But they didn't save the stables. A lot of the mules and ponies were cremated."

"It is wonderful to see a man change in an instant from utter listlessness to fire. 'Not young Jim?'"

"Yes; young Jim went, too," Blake paces the floor with disordered step.

"Young Jim! It was bad enough ter be cheated onto him, without hearin' of his bein' burnt ter death. The likeliest, friendliest pony ever raised on these peraries." Then, with sudden passion, "Who done it? I'll help hunt him down. Who do they suspicion?"

"Well, Dekel and his friends kind of insinuate that perhaps you did."

"Me?" he shouts. "What for?"

"On account of the pony and the colts."

"Me! Why, I wouldn't hurt a hair of Young Jim's shiny coat. I wouldn't burn the scrappiest old mule that ever balked in harness. I wouldn't burn a cockroach alive. Nobody that knows Energy Blake is goin' ter believe any such a tale. Old Dekel don't believe it himself. He can't think I'd burn any kind of a horse ter spite a mean rogue like him. He ain't wuth it."

"His contempt has the effect of cooling his rage—a state of mind rare with him."

"Well, if we don't start, we won't get there. Goin' ter the arbitration, Winbush?"

"I thought I would," replies the young man, anxious at all times to join the natives; be one of them, in fact.

"Wait ter I git Dumps, pa; I'm goin' ter grandma's," says Celie, running off before a negative is possible. She does not keep them waiting. She simply adds to her house dress a long skirt of mother's, a wide-brimmed hat and a pair of crocheted gloves. She is first at the gate. Her cheeks shame the wild roses in the fence corner; she hums a little tune to hide her anxiety. Winbush deduces himself with the belief that all this haste, this sweet color and high spirits are for him. He attempts to assist her to mount; but before he can make up his mind how to approach the staid old pony that Celie wickedly causes to caper she is up and away. She rides as the bird flies; over stumps, briars, hurricane roots; every place where she knows Winbush dare not follow. In fact, he is soon in a jog-trot by the side of Mr. Blake, and finds himself asking a very silly question.

"You can't get out of this arbitration?"

"Who wants ter git outen it? But, ef I wa'n't a jest man, after this mill business, I'd only settle with bullets. But I'd do fair; I ain't a scallawag, like him. When this is over, let him look out how he fools with me. I'll put a hole in him as quick as I would an alligator."

"His branding colts couldn't have been a mistake?"

"Ef it was, would he stick it out when I show my marks? Ef he was a poor man, 'n' needed a pony, I'd give him one; but he's 10 times richer 'n' me, 'n' he shan't have 'em. People do make mistakes, but not old horse raisers like him. I branded a colt once that I thought was mine, 'n' never knowed no better for the longest. But I was young then, 'n' a new hand. I don't make them mistakes now; neither does Dekel. There," changing his tone abruptly, "ain't that a pretty sight?"

Before them rolls a prairie, only a few miles in extent, but a treeless, grassy, wind-swept, genuine prairie. It is dotted with half-wild ponies, about the size of Texas ponies, differing mainly in strength, which is inferior, and temper, which is much kinder. A variety of brands indicate many owners, and it seems the easiest thing in the world to make a blunder. They are extremely thin—so thin that they might be the ghosts of defunct Indian ponies, haunting their favorite pastures. In reality, they are very much alive. Removed to the stable, feeding and grooming transform them to good-looking, sturdy beasts, useful anywhere. In the prairie regions they are the principal living of the native whites.

"I'm afraid my gray two-year-old is gone," says Winbush. "I hunted for him every day this week."

"Why, what's this one?" asks Blake, pointing to a pony grazing near.

"Oh, I've seen him every day. I don't know who he belongs to."

Blake eyes him with the expression of one who can't understand how a man can be such a fool.

"That's your pony."

"That? Truly? Sure enough; there's my brand. He must have kept the other side to me off the time."

Celie is near enough to hear. She throws her father a mischievous glance and turns a quick, resistless laugh to a

birdlike song, that ripples over the prairie. Her father grins, but shakes his head at her. "Here's the road to your grandma's, Celie. The arbitrators are jest 'round the pond. So you go on."

"It's too late for grandma's. I'll take the cows home. I see three, five, six of our sucklers with the horses." She dashes away on what seems to Winbush a foolhardy errand, and he says so.

"Celie's head's level. She's help me drive ponies many a time, 'n' I reckon they all know her pretty well by this time."

Hermie Dekel rides toward them from "behind the pond." He had caught sight of a slender, flying form on an old marsh pony that had the power to draw him from anything. Mr. Blake is about to snub the innocent young fellow in the harshest manner, when something in the face of the latter sends his still keen eyes back to the prairie. Instead of the pretty picture of Celie driving the cows, they meet a scene at once thrilling and horrifying—cows running full tilt for home; ponies scattering in all directions before the mad flight of the girl pursued by a stallion. Her father is cooler than her lover, though the latter retains sense enough to obey orders.

"Tother side, Hermie! Get your gun ready. We must kill the stallion before her old pony gives out. Don't be afraid of skeerin' Celie; she's clear grit all the way through."

He shouts these words as he gallops to the girl's right, while Hermie is even sooner at her left. Winbush bitterly envies the young cracker his nerve and ready courage, and no detail of the rescue, from the first plunge to the final coup d'état, escapes him. Celie has lost control of her pony, who has the bit in his mouth. But she sits him superbly, notwithstanding his wild plunges. The intelligent brute has mastered the situation. He has left his age behind; running, plunging, dodging the furious stallion, that often snags viciously at the rider, but can never quite touch her. The sharp teeth tear also at the devoted pony's mane and skin, with a sound that sends a shiver through the girl's frame. Of course, with two such riders and dead shots after him, this cannot go on long. Blake and Hermie get him between them, and two simultaneous shots end his career. The poor pony drops at the same time, bleeding and exhausted—a brute hero in his gallant action. Celie is on the ground as soon as he, and kneels by him.

"Poor Dumps! What horrid wounds! You did not let the bad horse hurt me, though he bit at me a dozen times. And pa said you were too old for service. Think of that, Dumps!"

"I'll never say a pony's too old ag'in. Hello!" looking at the dead stallion. His daughter had taken his attention until this moment. "It's Marsh! How did he get out? I barred him up good this morning myself."

They are now in a great crowd, for the men "around the pond" had been near enough to hear the noise. From the opposite direction the rest of Blake's family are coming at full speed on other swift little prairie ponies, his wife's sun-bonnet flapping in her face, and his boys' stumpy legs quite independent of stirrups.

"Is that Marsh layin' dead yander? I knowed something'd happen as soon as Peterson told me he seed Dekel slippin' 'round our stables this mornin'," pants Mrs. Blake.

"Old Dekel?"

"That's what Peterson said, 'n' you know whether he fibs or not." Blake turns to the crowd.

"Marsh had ter be shot; the stallion what has taken all the prizes the last four years. 'N' Celie might er be'n killed." This one sentence is an arraignment, a trial, a conviction. As Dekel throws his evil glance around, he sees that he has overreached himself; that the first question and some others are already arbitrated. His ugly temper stands him well in the place of courage.

"Peterson lied; that's all there is to that story. What are you all waiting for? Ain't you goin' ter arbitrate them colts?"

Potter shrugs his homespun shoulders, but turns, the rest following. Mr. Blake leaving the wounded pony in care of his wife. Hermie and Celie, the latter mounted on her mother's pony, bring up the rear. They have been too much engaged with each other to notice the last complication of affairs between their sires.

The crowd re-enters the grove and arranges for the long-anticipated arbitration. But their promised enjoyment, the gusto, has departed from it. So serious an affair has never before occurred in Sumter. Murder is nothing in comparison. With as few words as possible they get the principals and witnesses inside the pen, deriving a sort of solemn satisfaction from the punctilious performance of all the formalities. As many spectators as can lean on the logs; the rest from an outer circle on horseback. Celie is on the very outskirts, and by her side is the objectionable Hermie. He is very handsome, and sits his horse with enviable grace. The contrast between him and poor Winbush is extreme. The girl glances over it, and her father secretly acknowledges it.

"Hermie's no slouch of a man—that's certain. Ef only he wa'n't old Dekel's son!"

Then he turns his attention to the business, which is very quickly over; for the right is on his side, and he has plenty of proof. Dekel, who knows the world pretty well for a backwoodsman, had depended on his position as "richest man" more than any evidence he had trumped up. That title has changed irrevocably to "meanest man" and the arbitration is a brief one.

"Gentlemen," says Blake, "I ain't goin' ter give you any petterick credit fer doin' what's right, but ef you'll go home with me I'll treat ter some of the best skinmings you ever crooked your elbows at."

"I call this an infamous decision, 'n' I won't accept it. I'll appeal to the law," cries Dekel, in a rage. His hearers are stunned. Appeal from one of their illegal, common-sense courts of arbitration? Go back on one of their wild, shrewd, just decisions? Such a thing had never been heard of. The few inclined to stand by Dekel as the "under dog" now draw away. He stands quite alone, and Blake's generous heart is touched.

"I've my colts, boys, 'n' I'm willin' ter call it square, 'n' no hard feelin's to anybody." He gives his adversary a friendly nod and smites the colts. "I'll ferry you home, so you won't make any more trouble."

"You'll ferry my son home, too, by the looks of it," says Dekel, instantly sending Blake's blood to the boiling point.

"Ef Old Master ain't got no more use fer your son than I have, he's got a bad chance ter git ter heaven."

"Mebbe so; but that gal er yourn don't think thataway, 'n' you'd ferry home a red Injun ef she wanted one."

Blake is quite beside himself. Potter and Penny have all they can do to hold him. "Lemme go! Human can't stand any more." They tighten their hold, but turn their faces to Hermie, who makes his way to his father, puts on him great, loving hands, and compels the shifty gaze to meet his own honest eyes.

"Dad! dad! Has them colts lost your senses? You don't mean one er them words, 'n' you're dead sorry this minute that you said 'em."

"Confound ef I don't! Confound ef I am! Energy Blake's got his claws stretched out fer my son as well as my property."

"Now you've done it, shore enough, dad. Celie'll never look at me ag'in after that insult."

"You're right, young man; she won't—I'll see ter that," says Blake.

This is a dreadful state of affairs, and troubles the Sumterites, who had long ago made up their minds that the prettiest girl and the finest young man were "cut out for each other."

"I've got it!" cried Potter. "Shet up, Dekel; keep cool, Energy. Boys, we'll arbitrate this."

"Arbitrate it?" echo several, not sure they understand.

"To be sure—arbitrate it. Ain't that what we're here for? We'll settle this business as we did 'tother. But fair, Dekel—don't you be skeered about that."

The strangeness of the proposal takes the men's breath away, and the audacity of it charms them. They meet each other's eyes doubtfully, inquiringly, then raise a shout, in which Celie's little horrified cry and the angry remonstrances of both fathers are drowned.

"Somebody hold Energy 'n' keep off Dekel," shouts Posey. "I call it a lucky chance that all this happened the same day. Here's the pen, 'n' here's the arbitrators in good practice. What are we waitin' for?"

The humor of the situation to the crowd changes suddenly to its lightest and brightest. They will have a real arbitration, after all—one that nobody ever had before; one that they can throw hearts and souls into. The two young people, protesting at every step, are led into the pen, and two men detailed to hold their bridles, lest they leap the inclosure and ride off on the fastest ponies of the prairie. Witnesses are in a lustle, bearing testimony to facts that nobody needs to be told—how this girl and boy have been lovers since childhood, while both parents looked on (until lately) well pleased. They keep it up as long as they can, making the most of it, and getting all the fun that they had been cheated of, and more.

"Gentlemen, we're agreed; not two outen three, but all of us. We find that it's too late fer Dekel 'n' Energy ter fly offen the handle about this. Hermie 'n' Celie's be'n jewlarkies too long. Besides, Sumter won't stand it. Young 'n' old has be'n lookin' constant fer these two ter jump the broomstick 'n' give 'em weddin' cake, 'n' chicken pie. 'N' we find that, as John Dekel's got the big head, 'n' Energy Blake's got the hard head, they can't be impartial, 'n' can't be allowed a say-so in the matter. They're injin' from breakin' off the match or aggravatin' anybody about it. This is fair 'n' square. Nary one of us has got any intrust of our own in it, 'n' it's a jest decision."

At any rate, it is conclusive, and so the enemies accept it, though a bitter pill. The youthful prisoners, who throughout the ordeal sat their ponies in silent mortification, take the first moment of liberty to leap the barricade and ride out of earshot. Then they draw rein, and for the first time their glances meet. The sense of absurdity that has filled them bursts bounds, and they laugh until nature is weary.

"Oh, I kin never look them people in the face ag'in," says Celie.

"They're a set of loozers, that's a true fact," says Hermie. "I'm embroiled to 'em, all the same. I think how they bullyragged our daddies? Now, you kin name the day. You've got no more excuse."

"Well, see what pa says. Here he comes."

Energy Blake has the first word. "I'd rather you wouldn't consider this settled ter me 'n' Dekel makes friends."

"It's done arbitrated, Mr. Blake, 'n' there's nothing ter settle but the day. 'N' this is the best way ter make friends. You'n dad'll hatter come 'round when you see us so happy."

"And I'm sure, you'd like me ter have a man who knows his own pony," says Celie, with an arch smile and loving pat that conquers.—N. Y. Times.

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At sight of a strange person, object or animal, a baby will cry. Anything black will produce more disturbance in the mind of a baby than anything white. A child refusing to go to a relative in dark clothes would not hesitate if the suit were changed to a light-color, with a white, red or blue necktie.

## WOMAN'S LIFE-CHAIN.

## How Links of Happiness are Forged or Broken.

## More Interesting Than Hypnotism.

The fascinating and surprising romances which deal with hypnotism and mesmerism, and the influence of the mind over matter, seem at first thought almost too fanciful to have any foundation in fact; but, yet, they really are founded on scientific facts which cannot be disputed; they seem mysterious because they are uncommon. The influence of one mind over another is really no more remarkable than the influence which our own minds exert over our own bodies, and the contrary effect which our bodies have over our minds. Who would believe, for instance, that any one could get a "crick" in the neck just from imagining that a window is open behind him when really it is closed; yet this has actually occurred; and there are numberless quite as surprising instances, when the influence works in the other direction—from the body to the mind. It is a common thing to see a person who is usually bright and cheerful and whose character and behavior are a model of excellence, plunged for days or weeks into a fit of gloom and melancholy and remorse for some imaginary wrongdoing, all because some bodily function is impaired, perhaps the stomach is out of order or the liver is not working properly, or there is some other unsuspected physical weakness or derangement.

## THE LIFE-CHAIN.

These facts prove that all the various faculties of both mind and body are dependent upon each other, like the links of a chain. The body cannot say to the mind: "I have no need for thee." The mind cannot say to the body: "no faculty of either the body or the mind can say to the other; nor can all the other faculties together say it to any one faculty. Each part of the human make-up is dependent upon all the other parts, and all are dependent upon each. If one link in this intricate chain of life is weak, the whole chain is uncertain and liable to snap. It is a proverb that "a chain is no stronger than its weakest link." This is true of the human constitution; an unexpected weakness at a single point may cause the whole constitution to give way under the slightest strain.

## THE WEAK LINK.

Thousands of women who might be perfect specimens of physical womanhood—whose constitution is sound and strong except in one particular—suffer continual martyrdom of body and mind because of some unsuspected weakness in the organs distinctly feminine. Even intelligent doctors are slow to realize where trouble of this kind is located. They are well-meaning, easy-going, but sometimes over-busy or careless. They frequently mistake the symptoms and treat the patient for nervousness or biliousness or dyspepsia or liver or kidney troubles when the real difficulty is in the organs distinctly feminine; there is the weak link in the life-chain, and there can be no permanent recovery, no reliance upon the constitution, until these organs are made strong and healthy both in structure and function.

## HOW IT IS MENDED.

The one physician who more fully, probably, than any other has realized this state of affairs and has done more to help womanhood out of these organic weaknesses than any other doctor in this country, is Dr. R. V. Pierce, Chief Consulting Physician to the Invalids' Hotel and Surgical Institute, of Buffalo, N. Y. For the past thirty years he has made a special study of the diseases peculiar to women; and with his staff of eminent specialists has during this time treated more than two hundred and fifty thousand women, either personally or by letter. He has discovered the weak link in woman's life-chain; and what is better he has discovered how to mend it and thus render the whole constitution strong and capable.

His success in this respect has been





### Standing Room Only.

In courtship's race he came to grief,  
This most unlovely chap,  
His legs were both so awful brief  
He couldn't make a lap!

—Cleveland Post.

### SOMETHING JAPANESE.

#### Flirting with Their Fans.



Eh?



Oh!!!—Punch.

#### Ambiguous.

He—Oh, yes; when I was in London  
I was enthusiastically received in court  
circles.

She (simply)—What was the charge  
against you?—Toronto (Ont.) *Christian  
Guardian.*

#### Handle with Care.

Toto (in tears)—Boo-oo-o!  
Papa—What's the matter with that  
boy now?

Toto—Oh, pa! I've swallowed one  
of the cartridges of your revolver!  
Papa—You little wretch! And I  
can't even give you a thrashing for fear  
of exploding the cartridge.—*London  
Globe.*



First Passenger—Can you swim?  
Second Passenger—No.  
First Passenger—Well, then, what  
would you do if the ship were suddenly  
to go under?

Second Passenger—I would drown.

#### High Price for Beer.

Mr. Faxon—Did you observe any-  
thing in the way of a temperance move-  
ment in the mining towns out West?  
Returned Traveler—Well, the nearest  
thing I saw to one was out in Living-  
stone, Mont. Out there they charge 25  
cents for beer.—*Somerville Journal.*

#### On the Other Foot.

"All I demand for my client," shouted  
the attorney, in the voice of a man who  
was paid for it, "is justice!"  
"I'm very sorry I can't accommodate  
you," replied the Judge, "but the law  
won't allow me to give him more than  
seven years."—*Tid Bits.*



"O! tell yez o! will not clane out me  
sell. O!d have the jail furrest!"

The George Ertel Co. has gotten out a neat,  
handy little catalog of their incubators and  
brooders, with hints as to the best methods  
of making chicken-raising successful and  
with pictures of their various improved in-  
cubators and brooders. George Ertel Co.,  
Galveston, Ill.

## THE DAIRY.

### A CREAMERY.

#### Some Common Sense About the Insti- tution.

(Read at Mt. Pleasant, Jefferson County, Pa., by  
David Diener, Brookville, Pa.)

I suppose that all present know what  
is meant by a creamery. It is a plant  
calculated for the manufacture of but-  
ter and cheese, but which can make  
neither without material to make it out  
of—water? I say, no. As we all  
know, it takes milk, and in order to get  
milk we must have cows.

There is not much trouble in running  
or operating a creamery, or to have it  
operated by some competent person, so  
far as making butter is concerned. But  
to operate one successfully in a finan-  
cial way, so that it will pay a dividend  
on the investment, is quite another mat-  
ter. But I would say right here, our  
wind and also our money in this com-  
munity has all been spent long before  
this time, so that it is hard to muster up  
courage enough to say anything in its  
favor. But I still claim that a creamery  
that would be well patronized could be  
made profitable in most any farming  
community, but not on the co-operative plan.

To run a creamery we must have, as  
I said before, cows, and plenty of them—  
not less than three or four hundred of  
good, level-headed cows to start with;  
or, what would be better, if the cows  
carried plenty of good, rich milk and their  
owners the level heads.

I have heard it said by stockholders  
in a creamery that they had no money  
to buy cows with. Every one should  
think of that before taking stock. It  
would be far better for those men to in-  
vest their money in cows and let some  
one else take the stock. In our case  
the majority took the stock and the  
creamery was built, and if we were to  
judge by the appearance of things, sim-  
ply folded their hands and expected it  
to turn out plenty of good butter and  
a dividend on the stock taken.

We can no more expect to turn out  
butter from a creamery without milk  
than we can expect to turn out lumber  
from a saw-mill without timber, or flour  
from a grist-mill without wheat.

A co-operative creamery costs too  
much to run it. In the first place, we  
must have a practical butter-maker, for  
which we must pay from \$50 to \$75 per  
month; we must have a salesman, col-  
lector and secretary, all of whom must  
be paid for, and a treasurer, who must  
have something for his trouble. And,  
then, there are too many bosses; every  
one wants to run it according to his own  
peculiar way of thinking, and if it is not  
run that way he is going to stop bring-  
ing milk. Of course, that betters the  
situation when he has got to help pay  
the expenses. And another thing that  
I wish to speak of here is that a draw-  
back to non-stockholders patronizing a  
creamery, or has been in our case, and  
that is, not knowing what they get for  
their butter until about two months after  
they deliver their milk. If a creamery  
is not fortunate enough to have its but-  
ter contracted ahead at a fixed price,  
the managers should have enough busi-  
ness management in them to calculate  
how much they will be able to make out  
of their butter in a certain month, and  
then offer that price at the beginning  
of the month, so that patrons would  
know what they were doing right along.

In conclusion, I would say, if anyone  
thinks of embarking in the creamery  
business let him be a practical butter-  
maker—at least, one of the firm—so that  
he can make or oversee the making of  
his butter, and, next, that he has plenty  
of cows pledged to make it a success  
from the start, then go ahead. Other-  
wise, let it alone. A creamery with  
plenty of milk and properly managed is  
a benefit to any community; otherwise,  
a curse.

#### White Butter.

The whiteness of the butter is doubt-  
less due to the timothy hay on which the  
cows are fed. This is very poor feed for  
cows, being deficient in fat, having only  
1 1/2 per cent. of it, while good clover hay  
has 3 1/2 per cent. Timothy is still worse  
feed if you are ripe, or nearly so. It is  
by good question that the food has  
very much, if not all, to do with the  
color of the butter. At the same time,  
cows vary in this respect, but only in  
their ability to extract the coloring mat-  
ter from the food. If a better color is  
desired, the artificial coloring must be  
used. The quantity of any of the butter  
coloring in the market to be used is half  
a teaspoonful for five gallons of cream.  
This will produce a fine, pure golden  
tint, which is sufficient. Any larger  
quantity will give the butter an orange  
or reddish shade.

#### Abortion in Cows.

It is most probable that the loss of  
calves in the herd is due to the cows be-  
ing deprived of exercise, which is indis-  
pensable for the health of all animals.  
When they are tied in the stable all the  
time they have not sufficient exercise for  
health, and, becoming weak, are not able  
to withstand the strain on them, and  
thus lose the calves when they are half  
grown. The drinking of ice-cold water,  
too, is sufficient to cause loss of the calf.  
Some exercise should be given to the  
cows every fine day in the winter, at  
least.

There is more Catarrh in this section of the  
country than all other diseases put together,  
and until the last few years was supposed to be  
incurable. For a great many years doctors pre-  
sented it as a local disease, and prescribed local  
remedies and by constantly failing to cure with  
local treatment, pronounced it incurable. Science  
has proven Catarrh to be a constitutional  
disease, and, therefore, requires constitutional  
treatment. Hall's Catarrh Cure, manufactured  
by F. J. Cheney & Co., Toledo, Ohio, is the only  
constitutional cure on the market. It is taken  
internally in doses from 10 drops to a tea-  
spoonful. It acts directly on the blood and purges  
surfaces of the system. They offer one hundred  
dollars if you can cure it. Send for  
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Sold by Druggists, 75c.

## BRIE CHEESE.

How to Make and Preserve it as they  
do in Europe—Its Introduction into  
America and its Position as an  
Agricultural Product.

One of the finest, if not the finest,  
and most popular of all the soft cured  
cheese made in Europe, and but lately  
made in the United States, is that known  
as the Brie.

This brand of cheese was made in  
Europe many years ago, and has main-  
tained until the present day an ex-  
ceptionally good standing. It is at  
present manufactured by many Ameri-  
can farmers, who regard it as the most  
desirable food in the dairy line. It is  
a soft, rich cheese, whether made, as it  
generally is, from milk with all the  
cream, or half-skimmed-milk. As the  
qualities are so near alike it is quite  
difficult to distinguish the change, the  
latter quality being used generally by the  
poorer class of people, who skim their  
milk to purchase the other necessities  
in making the cheese.

The method of manufacture is pre-  
cisely the same, no matter what kind of  
milk be used, as it is in the churning  
that the variety is differentiated. The  
milk is first to be strained in the usual  
manner, and placed in a suitable vessel,  
and at once the rennet is added and  
thoroughly mixed or stirred through  
the milk. This intimate mixture is  
very important, as it regulates the for-  
mation of the curd in the shortest time,  
and thus has an effect upon the quality  
of the cheese. Moreover, it has the  
effect of producing an evenness in the  
curd, making the cheese the same soft-  
ness of texture, color, and flavor. This  
indeed applies to all kinds of cheese,  
and is a matter that should be given a  
careful and matured consideration by  
the makers of cheese of every kind and  
under all circumstances.

The quantity of rennet added is such  
as to make the curd in some time be-  
tween one and a half and two hours,  
thus giving a somewhat firm curd, which  
is dipped out of the vats by the means  
of a concave sieve, which strains out the  
whey, and is at once placed in molds,  
which are mere hoops of wood about  
three inches high and 15 in diameter,  
but having an extra width loosely fitted  
on the top, thus giving sufficient space  
for the curd to shrink in the drying,  
and leaving the cheese of the full thick-  
ness of three inches. As soon as the  
cheeses are sufficiently firm to be moved—they  
are still in the molds, which rest on  
oaken slats a little larger than the cheeses  
and on brush mats placed directly under  
them to aid in the escape of the whey—they  
are moved to a curing room and  
placed upon tables, which are also made of  
oak, where the whey is drained off. I  
have found after many trials with the  
use of other kinds of wood, that oak is  
the best, as it is a conceded fact that oak  
timber kept always saturated with water  
is exceedingly durable and does not  
absorb the whey—or, in other words, the  
serum or watery part of the milk used  
in the making of cheese.

As soon as the cheeses become suffi-  
ciently solid, solid enough to warrant you  
to move it without injuring from the  
mold in which it rests, take it from  
the mold and dress it. This is done to  
remove the slimy matter which has  
gathered on the sides; to grate down the  
roughness of the surfaces, thus prepar-  
ing them for salting, which is the first  
step in the direction of curing. This  
being done first on one side and then  
the other, using only and invariably the  
finest salt procurable. The salt natu-  
rally brings a quantity of moisture to the  
surface, which is wiped off with a clean  
white rag; then you must turn the cheese  
over on the other side and repeat this.  
In some of the dairies which I have  
visited, a mixture of salt with finely-  
powdered wood charcoal, making it of a  
light-gray color, is used, in the belief  
that it prevents worms and other insects  
from the cheese. This preparation has  
no material effect upon the cheese,  
and it is advisable to do this, if the  
place where you store such produce be  
inhabited by such injurious insects.

Always keep your cheese in a cellar  
where the temperature ranges from 50  
to 60 degrees, and you will find that it  
will always be of a nice taste, a splendid  
condition, and will last considerably  
longer.—Jno. G. CHALLICE.

To Avoid Flavor of Turnips in Milk.  
If turnips are fed immediately before  
milking time, or even at the milking,  
the taste and odor of them will have  
passed off through the skin with the per-  
spiration before the next milking time.  
It may be that the odor is acquired by  
the cow breathing the air of a stable in  
which the turnips are kept, as this is  
sufficient to impregnate the cow's system  
with the odor. There cannot be too  
much caution exercised when turnips are  
used in a dairy, and as beets, either  
sugar or mangel, are more productive  
and nutritious than turnips, it is better  
to grow these for the cows than the too  
odoriferous kinds. To insure safety in  
feeding roots to cows, they should be  
sliced, which may be done with a sharp-  
edged spade or a shovel in a shallow  
box in the stable at the feeding time or  
a little before. It is a good way to give  
some bran or fine meal with the cut  
roots.

#### Red Water.

This is doubtless a disease of the liver,  
and not of the urinary organs. It fre-  
quently follows feeding with turnips,  
especially if they have been frozen. The  
liver is not working right, and the fol-  
lowing treatment will be advisable:  
Stop feeding the turnips for a time;  
give one pint of raw linseed oil or a  
pound of Epsom salts in some gruel of  
oatmeal or linseed; then give drinks of  
oatmeal gruel or of slippery elm bark,  
and cut hay (this must be free from  
weeds, which may even be the cause of  
the trouble), and give with the hay,  
after wetting it with warm water, two or  
three pounds of bran and half as much  
corn or oatmeal.

## THE ORCHARD.

### FERTILIZING FRUIT TREES.

#### They Need Much More Food than the Grains.

The orchard is usually the last part  
of the farm to receive aid in the shape  
of fertilization, though the demand for  
the fertilizing elements in order to pro-  
duce a good crop of fruit is, if anything,  
greater than in the case of the cereals.  
In fruit-growing, it is of the first im-  
portance to keep the orchard in a good,  
healthy condition. The omissions of  
one year cannot be made up by lavish  
attention the next. There is but one  
safe method, and that is to make pro-  
vision for the proper health and nourish-  
ment of trees or vines for each suc-  
cessive growing season; in fact, the whole  
problem is largely a matter of nourish-  
ment or fertilization. With proper and  
adequate food supplies, the matter of  
health and power of resistance of dis-  
ease becomes a secondary consideration.

As to the quantity advisable to use,  
recent experiments in New York show  
that the fertilizer requirement of an  
average apple orchard is fully 60 per  
cent. greater than the same area in  
wheat. The actual weight of the prin-  
cipal manurial ingredients taken up by  
one acre of apple-trees in one year was  
as follows:

Ammonia.....80 pounds.  
Potash.....100  
Phosphoric Acid.....15

A fertilizer formula of from four to  
five per cent. ammonia, five to six per  
cent. potash, and two to three per cent.  
available phosphoric acid would about  
fulfill the conditions. The application  
of such fertilizer should amount to at  
least 1,500 pounds. For bearing or-  
chards, where the soil is very little  
worked, the fertilizer should be applied  
in the Spring. Nitrate of soda in frac-  
tional applications is excellent, all of  
the crude potash salts are equally effec-  
tious, but the phosphoric acid should be  
in the form of a dissolved bone or acid  
phosphate. The fertilizing materials  
must possess a high degree of avail-  
ability.

#### Apricots in Arizona.

The summary of the bulletin on  
apricots recently issued by the Agricul-  
tural Experiment Station at Tucson is  
as follows:

1. Our cultivated apricots are derived  
from three species, but one (*Prunus  
Armeniaca*) furnishes all that are val-  
uable for fruits in this region.
2. The fruit takes a large quantity of  
potash and phosphoric acid from the soil.
3. In the fruit an average of 94 per  
cent. is flesh and 6 per cent. is pit.  
Kaisha has the smallest proportion of  
pit and Breda the largest.
4. There is 87 per cent. of juice and  
18 per cent. of fiber in the flesh of an  
apricot. The juice contains 13 per cent.  
of sugar, the flesh 12, and the whole  
fruit, including pit, 11 per cent. Of  
albuminoids (crude protein) there is  
1.2 per cent.
5. The mean weight of fruits of all  
varieties was one ounce each. The  
Breda bore the smallest fruit, averaging  
about 22 to the pound. The largest  
fruit was 12 to the pound, borne by  
Kaisha and Moorpark.
6. The soil not being a typical one for  
either apricot, plum or peach stock, the  
growth of trees upon the different kinds  
of stock was practically the same.
7. This season upon this soil fruit  
from trees of several varieties is larger,  
of better quality and earlier when upon  
apricot stock than upon Myrobalan.  
Other varieties show no differences due  
to stock.
8. Pringle was the first to ripen, but  
the fruit is not of as good quality as  
most others.
9. St. Ambrose bore the finest appear-  
ing fruit.
10. Royal was the most prolific.



## Class in History—

### Stand Up!

QUESTION—Who invented the  
first successful Reaper?  
ANSWER—Cyrus Hall McCor-  
mick, in the year 1831.  
Q.—Who builds the best grain and  
grass-cutting machinery at the  
present time?  
A.—The McCormick Harvesting  
Machine Co.  
Q.—Were their machines operated  
in the World's Fair field tests?  
A.—They were.  
Q.—Were the machines of their  
competition so operated?  
A.—They were not.  
Q.—Why?  
A.—Because they were afraid of  
the McCormick.  
Q.—What proportion of the world's  
annual supply of harvesting ma-  
chines is made by McCormick?  
A.—About one-third.  
Q.—Why did the farmers of the  
world buy 60,000 McCormick  
Mowers in 1895?  
A.—Because the McCormick No.  
4 Steel Mower is the best grass  
cutter ever built—that's why.  
The new McCormick Light-Running  
Open Elevator Harvester and Binder,  
the McCormick No. 4 Steel Mower,  
and the McCormick Corn Harvester,  
are unequalled for capacity, light-  
draft, efficiency of service and long  
life. Built, sold and guaranteed by the  
McCormick Harvesting Machine Co.,  
Chicago.

Agents Everywhere.

## Tree Planting.

In an address upon "farming" pub-  
lished in Bulletin 17 of the Arizona  
Experiment Station, Tucson, Ariz., Gov-  
ernor Hughes said, most pertinently for  
Arizona: "There is profit in tree-plant-  
ing. Nearly every farm has little nooks  
which cannot be utilized for farming.  
The ash, the cottonwood, perhaps the  
eucalyptus, and other fuel-growing trees  
ought to be cultivated on the borders of  
canals, and the main laterals might be  
planted with one or more rows of trees;  
they would grow here without irrigation  
and would serve as a wind-break, and  
thus aid in preventing the moisture of  
the fields from being absorbed by hot  
winds sweeping over them. They would  
have a tendency to check evaporation  
from canals and laterals by shutting out  
the rays of the sun, and at the same  
time it would provide homes for thou-  
sands of the feathered tribe who would  
pay for their lodging many times in the  
destruction of insects, as well as by pro-  
viding free concerts for the farmer's  
family."

## The Crosby Peach.

John W. Clark, North Hadley, Mass.,  
gives it as his opinion that for New  
England the Crosby peach is more re-  
liable than the Crawford, but no more  
so than the Old Mixon. He does not  
like it as a market peach for two reasons;  
it is undersized and as a rule of poor  
color, and when grown side by side with  
the Crawford's, the fruit will not aver-  
age but little if any better than good No.  
2 Crawford's.

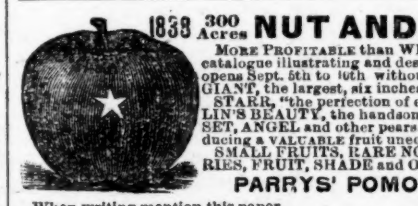
"If, on the other hand, I was planting  
peach trees for home use I should plant  
the Crosby every time, as it is a hardy  
and reliable variety of medium size and  
of good flavor. In other words, I con-  
sider the Crosby one of the best peaches  
to plant for family use, but a poor mar-  
ket variety."

## Grafting the Wild Crabapple.

By grafting the common apple on the  
wild crab, a dwarf tree is made, but the  
fruit is the same as that of the graft.  
Suckers of trees are not fit for grafts,  
as they may come from the roots, and in  
that case may not be the apple expected  
at all. Only the best prunings of the  
trees are taken for grafts. The pear  
may be grafted on the crab as well as  
the apple; the plum may be grafted on  
a wild plum, or on a wild cherry. All  
stone fruits should be grafted early, and  
before the other fruits.

## For Farm Cream Separators.

Write P. M. Sharples, West Chester, Pa., Ziegler, Ill.



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